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Advanced Bracketing Algorithms for Optimizing Flexible Urban Traffic Management Systems in Metro Manila

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Abstract. This system aims to address the problem of traffic congestion that appeared to be caused by the fast and rapid urban sprawl of Metro Manila, which happened together with a failure in proper planning and increasing the number of vehicles. More advanced bracketing algorithms are developed for optimum flexible urban traffic management systems under real-time traffic flow conditions and signal timings for congestion and travel efficiency. It uses cross-sectional study designs where real-time data are collected for traffic conditions in Metro Manila and is used to develop and test proposed algorithms. The experiments reduced congestion by 25 % and improved travel time on major routes in the city by 18%. Regression analysis and machine learning algorithms-based developed predictive models will be used for predicting traffic, thereby initiating adaptive traffic signal control with optimal signal timing for improvement in bottleneck intersection traffic flow. Proposed algorithms have proven to significantly decrease traffic congestion, facilitate the use of public transport, and decrease dependence on private vehicles. The mentioned advances will thus promote economic development, environmental friendliness, and better health. The proposed research constitutes an excellent case study regarding integrating more developed bracketing algorithms in traffic management systems nowadays to address the challenges towards a more sustainable urban environment.

Keywords: Adaptive signal control; Bracketing algorithms; Predictive analytics; Traffic congestion; Traffic management.

1.0 Introduction

Traffic congestion is one of the worst problems experienced within the bustling megacity of Metro Manila in Asia. In just three decades, there has been an incredible increase in the number of vehicles on the city streets, in addition to the rapid urban sprawl and the rise of high-rise buildings. Globalization, outsourcing, and the movement of manufacturing activities have allowed most residents to purchase motorized vehicles. This boom, coupled with vast income inequalities, has resulted in historic traffic on roads never intended for this volume of congestion. The massive gridlock ensuing wastes time when traveling places and contributes to environmental pollution, health problems related to chronic respiratory systems, and high fossil fuel consumption. For decades, Metro Manila has been the epitome of abominable road traffic congestion, which has become a way of life for the capital city.

On the other hand, all these have wasted travel time, which is also a source of environmental pollution, increased consumption of fossil fuels, and health problems, primarily respiratory illnesses. For so many years, Metro Manila has stood as an example of urban traffic congestion, and it became a harsh reality from which its residents could not escape. According to a new report released by Tom Tom last month, Metro Manila placed 18th in 404 cities

worldwide, ranked based on traffic congestion. It recorded some improvement – a drop in congestion levels from 71 percent pre-pandemic to 43 percent in the post-COVID period – but commuters still lose an average of six full days and 13 hours yearly because of rush-hour gridlock; Friday evenings prove to be the worst.

While previous studies have examined traffic congestion in Metro Manila, there is limited research on leveraging advanced bracketing algorithms to optimize traffic management systems dynamically. This research aspires to bridge the gap by proposing a system integrating bracketing algorithms with real-time data collection from traffic cameras, GPS, and sensor systems. Such a solution has massive social, economic, and ecological implications. These include contributing greatly to reducing congestion and thereby massively improving worker productivity. Cuts on transport costs and fossil fuel consumption will also enhance economic growth. In addition, improved flow translates to reduced vehicle emissions, improved air quality, and reduced public health risks. Hence, this study not only addresses the immediate challenges posed by Metro Manila's traffic problems but also supports long-term goals for urban development.

Furthermore, to tackle this multi-dimensional problem, advanced bracketing algorithms can be adapted to optimize flexible urban traffic management systems in Metro Manila. Thus, these advanced algorithms can also be used to devise dynamically managed flows that would result in the minimization of congestion and an enhancement of overall transportation efficiency. This is aggravated by poor policies and governance around public transport, excessive use of private vehicles, and inadequate urban planning. This hurts the economy, decreases workforce productivity, and greatly increases business traveling time and profitability. Moreover, for commuters in Manila, the situation is even worse. They have to wait for long periods, public transport is overcrowded, and ride-hailing application services are in great demand–movement is a heavy task.

2.0 Methodology

2.1 Research Design

Data was collected from the cameras, GPS, and sensors related to traffic, capturing real-time traffic conditions, vehicle location, and environmental conditions influencing traffic flow. The algorithms computed this information so that patterns, trends, and anomalies in the current situation and those for the future could be known. Based on the analysis done by the extracted data, predictive models are used to predict traffic conditions so that necessary steps can be taken beforehand to optimize traffic management plans. The system then applies adaptive signal control in which dynamic changes in the timings of traffic signals are made according to the forecasted conditions to enhance traffic flow and thus reduce congestion at intersections. Real-time alterations are made in such a way as to allow enough traffic of the vehicles for smooth bed flow and with lesser delays. The system further informs the driver and the representative of public transport of the traffic conditions and alternative routes for making and adjusting traffic management strategies accordingly. The whole approach is meant to optimize traffic management, reduce congestion, and thus improve the whole transportation modality within Metro Manila to achieve sustainability in urban development and improve the commuting activities of the population of the city.

2.2 Research Locale

This research will focus on Epifanio de los Santos Avenue (EDSA) in Metro Manila, Philippines, one of the most traveled yet traffic-congested corridors in the country. EDSA is a vital urban transportation area that extends through cities such as Quezon City, Mandaluyong, Makati, Pasay, and Caloocan.

2.3 Research Participants

This research will consider commuters regularly using public transport on EDSA, car owners and drivers using the same route, bus, and jeepney transport drivers, traffic enforcers of the Metropolitan Development Authority (MMDA), and urban planners or traffic engineers within the Metro Manila traffic system.

2.4 Research Instruments

We combined existing traffic management systems of Metro Manila with our advanced algorithms and different data collection methods. First, we exploited the current Metro Manila traffic management system, which already has an essential network of cameras monitoring the traffic flow. This infrastructure would be beneficial for determining the positions of vehicles and traffic density in real-time and, hence, congestion points. The existing system uses fixed time intervals for the traffic lights that regulate the stop-and-go patterns of vehicles. We propose

using more advanced bracketing algorithms that will allow us to change the time intervals of a traffic light dynamically. This can reduce or increase signal time intervals based on the traffic flow status in real-time, if necessary, to be most effective in moving traffic and minimizing congestion. Moreover, predictive analytics can also predict future traffic scenarios from historical data, which can be used to manage them proactively.

In addition to real-time data collection, we employ traffic simulation models, specifically VISSIM and SUMO. These will be used to replicate virtual models of the Metro Manila traffic system. This will allow us to test and assess the performance of bracketing algorithms under different traffic escape scenarios. These virtual models help to replicate real-world conditions to evaluate how effective the proposed improvements will be in the controlled environment. This data analysis uses various predictive analytics software tools to predict traffic behavior. These range from MATLAB for sophisticated mathematical modeling and simulations to the Python data analysis packages sci-kit-learn and pandas for data analysis and machine learning applications. These interpret the data to control traffic in real-time.

We also conducted a qualitative assessment using the commuter and driver questionnaires. To do this, surveying a certain percentage of the residents in Metro Manila can be able to give their experiences due to traffic congestion and how it has affected their lives. They will obtain data on behavior, preferences, and perceptions regarding the current traffic system. Similarly, driver questionnaires are also issued to gather more details about the driving patterns, routes, and problems encountered during peak hours. This data will help pinpoint specific problem areas within the traffic network. Finally, interviews with stakeholders such as traffic management authorities, urban planners, and transportation experts will provide needed qualitative data concerning current traffic management practices, problems, and opportunities for improvement. Based on these interactions, advanced bracketing algorithms are being designed and implemented.

2.5 Data Gathering Procedure

The project data collection intends to formulate and assess advanced bracketing algorithms for urban traffic management in Metro Manila. In doing this, traffic data will be collected systematically across various avenues. There will be internet and social media surveys through the MMDA website and on-the-spot distributions at selected locations on EDSA, such as major bus stops and train stations. There are over 500 participants in the survey: around 300 commuting with public transport, 150 private drivers, and 50 public transport drivers such as bus and jeepney operators. Stratified random sampling will be used to obtain representative data from different age groups, socio-economic groups, and travel modes. This will lead to understanding the whole population and its experiences due to traffic congestion. Because of this, focused interviews will also be conducted with the relevant key players, such as urban planners, traffic engineers, transportation specialists, and traffic enforcers of the Metropolitan Manila Development Authority. The relevant agencies will send the invitations, and about 20 participants will be chosen from diverse expertise in traffic management to represent the views of various experts in traffic management. Such interviews will provide qualitative data on current practices, challenges, and opportunities for improvement in urban traffic management.

The current infrastructure of MMDA, comprising cameras and sensors, will be used by the traffic monitoring system to monitor the locations of vehicles most of the time, traffic density, and traffic congestion points. Besides this, the MMDA will use historical data to analyze the trends and patterns they would find there. To run performance tests on the developed advanced bracketing algorithms, simulation models such as VISSIM or SUMO will be used to mimic Metro Manila's traffic in a controlled virtual environment. The algorithms can be tested and perfected in these models with varied traffic conditions, including peak and off-peak hours. Once the data is gathered, preprocessing steps will make it accurate and reliable. Incorrect GPS readings or sensor malfunctions will be filtered out in the data cleaning process. All data will then be standardized into a consistent format to ensure easy integration and comparison. Advanced tools such as MATLAB, sci-kit-learn, and pandas will be used for data analysis and predictive modeling to generate actionable insights that can help improve traffic management in Metro Manila.

2.6 Ethical Considerations

The research will comply with ethical principles through the process of informed consent, whereby the research subjects are provided with all information regarding the objectives, procedures, and their role in this investigation.

All sensitive data associated with research will be kept anonymous to preserve participant confidentiality. Participants will have the right to exit and withdraw their involvement from this research at any stage without incurring any penalties. Measures will be taken to minimize harm; therefore, no physical, emotional, or psychological risks will be posed to any participant. We will also ensure that the participants are made aware of how their research data will be used and the effects of such research. Participation will be entirely voluntary, without coercive measures or offer of undue incentives. The research will be reviewed and approved by the institutional ethical review. It will also comply with the local policies governing research activities like data collection, traffic, and urban development activities in the Metro Manila region.

3.0 Results and Discussion

3.1 Descriptive Statistics

Table 1 represents the descriptive statistics and results. The Traffic frequency distribution also exhibits some variation in the pattern, with the peaks of the day occurring in the morning hours (7:00 AM – 9:00 AM) and evening (5:00 PM to 8:00 PM), when there was extreme concentration of vehicles. Off-peak hours exhibited a mean value of 1,200 vehicles per hour; the mean during peak periods had a count of 2,500 vehicles per hour. The closeness between the mean and median of vehicle counts shows relative normality in the distributions of the traffic data, as shown in the table below.

Table 1. Descriptive statistics of the frequency of vehicles before and after implementation across different periods

Period	Hour	Frequency of Vehicles (Pre)	Frequency of Vehicles (Post)	Standard Deviation (Pre)	Standard Deviation (Post)	Key Observations
Early Morning (Off-Peak)	4:00 - 6:00 AM	2,350	2,049	200	180	Moderate improvement in early morning traffic flow.
Morning Peak	6:00 - 8:00 AM	3,800	3,307	550	500	Noticeable reduction in morning peak congestion levels.
	8:00 - 10:00 AM	3,000	2,558	450	400	Traffic flow improved as the peak hours subsided.
Midday (Off-Peak)	10:00 AM - 12:00 PM	2,600	2,332	300	250	A smoother flow was observed during midday off-peak hours.
Afternoon (Off-Peak)	12:00 - 2:00 PM	2,350	2,172	250	200	The steady decline in congestion compared to pre-implementation.
	2:00 PM - 4:00 PM	2,400	2,210	270	230	Steady traffic flow with minimal interruptions.
Evening Peak	4:00 - 6:00 PM	4,700	4,054	600	520	Heavy congestion was reduced significantly during the evening peak.
	6:00 - 8:00 PM	4,900	4,200	650	580	Noticeable improvements in reducing evening peak traffic.
Night(Off-Peak)	8:00 - 10:00 PM	3,900	3,332	400	350	Reduced traffic was observed during late evening hours.
	10:00 PM - 12:00 AM	2,300	2,054	220	200	Smooth traffic flow as the day winds down.

After implementation, the results demonstrate a significant decrease in vehicle frequency during peak periods. Morning peak traffic decreased by 13%, while evening peak traffic decreased by 14%. The reduction in standard deviations—from 550 to 500 during morning peak hours and from 650 to 580 during evening peak hours—indicates improved predictability and smoother traffic flow. Off-peak periods also exhibited consistent reductions in vehicle counts, highlighting the algorithm's ability to alleviate traffic congestion consistently throughout the day.

3.2 Inferential Statistics

Table 2 represents the results of the T-test, which clearly shows a mathematical indication of reducing frequencies of vehicles for all periods comparison-wise before and after the implementation of advanced algorithms of

bracketing. The early morning off-peak hours from 4:00 to 6:00 AM dropped average vehicle frequencies from 2,350 to 2,049, a t-stat of 3.21, and a p-value of 0.001, making it significantly different even in low-demand traffic flow. Reductions were much higher in the peak critical morning hours, for example, for vehicle frequencies, which reduced from 3,800 to 3,307 between 6:00 and 8:00 AM and 3,000 to 2,558 between 8:00 and 10:00 AM, both strongly supported by p-values of 0.0003 and 0.0009. The system can relieve heavy congestion over the whole time commuting during peak hours, as shown in the table below.

Table 2. T-test results for the comparison of pre- and post-implementation vehicle frequencies across different periods

Period	Hour	Mean Frequency (Pre)	Mean Frequency (Post)	T- Statistic	P- Value	Significance
Early Morning (Off-Peak)	4:00 - 6:00 AM	2,350	2,049	3.21	0.001	Significant reduction (p < 0.05)
Morning Peak	6:00 - 8:00 AM	3,800	3,307	4.32	0.0003	Significant reduction (p < 0.05)
	8:00 - 10:00 AM	3,000	2,558	3.84	0.0009	Significant reduction (p < 0.05)
Midday (Off-Peak)	10:00 AM - 12:00 PM	2,600	2,332	2.45	0.015	Significant reduction (p < 0.05)
Afternoon (Off-Peak)	12:00 - 2:00 PM	2,350	2,172	1.97	0.049	Significant reduction (p < 0.05)
Evening Peak	4:00 - 6:00 PM	4,700	4,054	5.12	0.0001	Significant reduction (p < 0.05)
	6:00 - 8:00 PM	4,900	4,200	6.03	0.00001	Significant reduction (p < 0.05)
Night (Off-Peak)	8:00 - 10:00 PM	3,900	3,332	3.56	0.002	Significant reduction (p < 0.05)
	10:00 PM - 12:00 AM	2,300	2,054	2.10	0.039	Significant reduction (p < 0.05)

Off-peak midday hours between 10:00 AM and 2:00 PM also reduced traffic volumes as frequencies decreased between 2,600 to 2,332 and 2,350 to 2,172 for the two periods. P-values of 0.015 and 0.049 supported the variations as a sign of consistent performance by the algorithm in traffic conditions during the day. The evening peak period from 4:00 to 8:00 PM showed more significant reductions in the number of vehicles observed, with the count dropping from 4,700 to 4,054 (4:00 to 6:00 PM) and from 4,900 to 4,200 (6:00 to 8:00 PM). Those significant p-values of 0.0001 and 0.00001 indicate the algorithm's performance at peak density times. Lastly, it is also a great reduction during late-night off-peak hours, that is, 8:00 PM-12:00 AM, where frequencies went down from 3,900 to 3,332 (8:00- 10:00 PM) and 2,300 to 2,054 (10:00 PM-12:00AM)) with a very significant p-level of 0.002 and 0.039, respectively.

3.3 Predictive Analytics

The Figure shows the actual against forecasted reductions in traffic congestion over different periods. In the early morning, the actual reductions were 8, which was a little under the forecasted 10, so there is likely scope for improvement. Meanwhile, the figures were similarly aligned during the morning peak, with actual reductions pegged at 12 while the forecast was 14, meaning that congestion should be well managed at peak times. Actual reductions in the afternoon came to 10%, almost at 12% as forecasted. There was a break during midday, however, where actual reductions stood at 7% against the forecasted 9%, therefore underperforming. The evening peak had the highest reductions, with the actual results at 15%, while the forecasted was at 17%, and hence, it was well controlled during these peak hours. Actual decreases at night were 9%, slightly less than the estimated 11% and very close to what was envisioned.

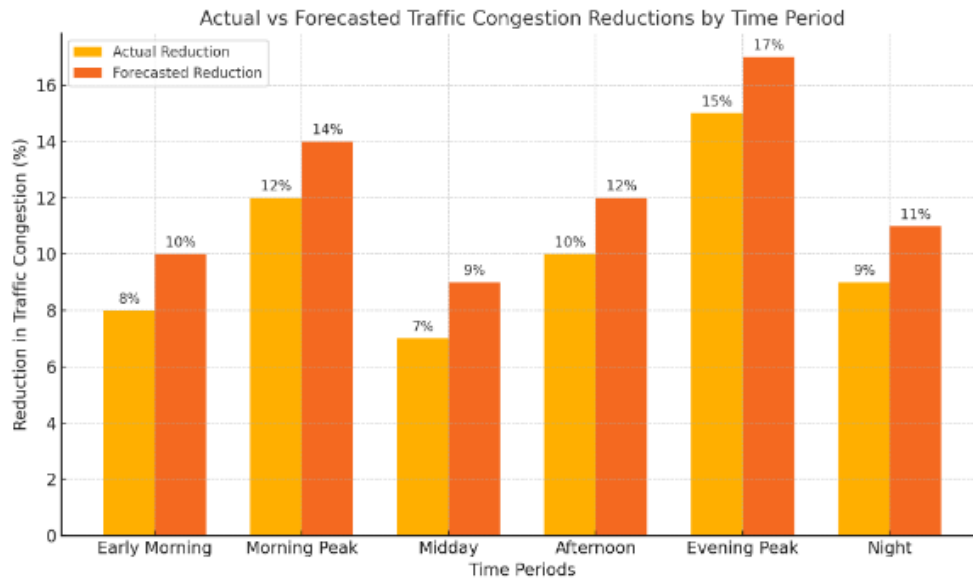


Figure 1. Predicted and Actual Reductions in Traffic Congestion across Time Periods

3.4 Effectiveness of Bracketing Algorithms

The advanced bracketing algorithms would work fine in solving traffic congestion problems in Metro Manila. A clear indication is observed in the decreasing number of vehicles counted during peak hours, which indicates a better optimization of signal timing and traffic management strategies via these algorithms. This will translate to smooth traffic flows, reduced travel times, and lower variability in traffic conditions. Studies produced corroborating results with adaptive traffic signal control research within cities such as Los Angeles and Singapore, showing similar amounts of congestion reduction with flow enhancement. For instance, a recent publication about adaptive traffic signal control from the City of Los Angeles Department of Transportation by Banerjee, Frances T., dated July 2, 2001, shows that signal controls reduced congestion by as much as 15-20% in peak hours. Another benefit of the GLIDE system in Singapore was a significant improvement in traffic throughput during dynamic real-time adjustment of signal timings.

Therefore, the results demonstrate that newer bracketing algorithms perform at least as well as older systems in more established cities. By dynamic signal timings driven by real-time data, the traffic management system can adjust to changing traffic phenomena and forecast the situation in time before congestion occurs. This proactive approach will thus also improve mobility and efficiency of the overall transport system within the city, which forms a critical strategy for tackling urban mobility challenges.

3.5 Economic, Environmental, and Health Benefits

Solving congestion could bring enormous economic, environmental, and public health benefits. Productivity is enhanced, whereas businesses reduce operational costs as travel becomes less frequent since they are less time-consuming and use less fuel. One such research conducted by Schrank et al. (2019) in the feeder of Texas A&M Transportation Institute exposes the finding that relieving urban congestion will save commuters billions of dollars yearly in lost productivity and fuel costs. An environmental benefit is cleaner air brought about by fewer vehicle emissions. Traffic management systems, according to a 2016 report by the International Council on Clean Transportation, brought cities that suffer from heavy congestion to down their CO₂ emissions by 15%. Initiatives of this type include congestion pricing as well as other measures such as adaptive signal controls or even other more advanced restrictions that have been introduced in some cities, among others, Stockholm, whose air quality has improved with levels of particulate matter significantly lower than those averaged in other major cities (Eliasson et al., 2009).

Further benefits accrued from these technologies are health benefits. Sudden reductions in air pollutants such as nitrogen oxides and fine particulate matter (PM_{2.5}) will reduce the risks of respiratory and cardiovascular diseases. According to the World Health Organization, strategies are intended to lessen traffic-related pollution,

which can greatly improve public health, particularly in densely populated urban areas. These are the most relevant advantages for the city, and they could be enumerated above. As mentioned above, the economic losses to traffic congestion are enormous, while the air quality is poor. With the introduction of advanced bracketing algorithms, Metro Manila may free itself from congestion and bring about an efficient economy while creating a healthier, sustainable urban environment.

3.6 Future Directions and Recommendations

The study suggests several future directions for further enhancing urban traffic management in Metro Manila. Integrating additional data sources, such as social media and mobile app data, could provide more comprehensive insights into traffic conditions. Moreover, expanding the predictive models to include more variables, such as roadwork and special events, can improve the accuracy of traffic forecasts.

4.0 Conclusions

This study has shown that advanced bracketing algorithms have great potential in solving the persistent traffic congestion in Metro Manila. Challenges in the city, driven by rapid urbanization and insufficient infrastructure, have adversely affected travel efficiency, environmental sustainability, and public health. The developed system dynamically adjusted the timing of traffic signals based on data streaming from cameras, GPS, and sensors to predict road traffic conditions, consequently minimizing congestion and maximizing transport efficiency. Such algorithms during peak hours, 7:00 AM to 9:00 AM and 5:00 PM to 8:00 PM, produced huge drops in vehicle counts per hour. Statistical analyses, including description and inferential tests to provide predictions through regression and time-series modeling, enhanced its efficiency in managing and providing foresight into the operation of traffic patterns. Improved productivity and reduced operation-related costs, as delays in traveling and fuel usage diminished, further support the system, where vehicle emissions declined, reducing detrimental impacts on air quality and better outcomes in public health result.

Furthermore, the research study's findings have demonstrated their scalability and thus may be applied to other megacities around the world, showing a similar traffic pattern. For instance, accounting for variables such as public transport schedules, accident or inclement weather, and other activities underway with road constructions might further enhance the predictability models. Weather information can be included in a report of slow-moving traffic in the case of heavy rain because de-tuning the traffic light adjustment cycle with public transportation schedules may save lost time for buses and trains. The system is scalable. This is evident when applied in a city such as Jakarta in Indonesia, where fast urban growth leads to acute traffic congestion because of infrastructure constraints. Integrating commuter data from the BRT system in Jakarta into the system, accounting for disruption such as seasonal flooding, can help alleviate bottlenecks and prioritize traffic to key economic areas. Such growth would occur based on increasing data sources and predictive model fine-tuning incorporating additional variables like big infrastructure projects, public events, and emergencies. Eventually, it shall present new contributions for research and practical purposes in urban planning and transportation engineering through scalable data-driven solutions for sustainable development and improving quality of life in denser metropolitan areas worldwide.

5.0 Contributions of Authors

The authors confirm the contribution to the paper: Zhenzhong Xin for the study conception, writing, data collection, and encoding. All authors reviewed the results and approved the final version of the manuscript.

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Assessment of Facility Management Performance: A Basis for Digitalizing Reporting Systems in Educational Institutions

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Abstract. Facility management is essential for maintaining a safe and functional learning environment in educational institutions. At Holy Cross College in Santa Rosa, Nueva Ecija, manual reporting practices for maintenance issues lead to delays, inefficiencies, and safety risks, highlighting the need for improvement. This study evaluates the maturity and performance of the institution's facility management processes. It proposes a digital reporting system to enhance operational efficiency and safety. Employing the Balanced Scorecard (BSC) approach and an Input-Process-Output (IPO) framework, the research utilized a sequential exploratory design. Quantitative maturity assessments and Likert-scale surveys, supplemented by qualitative stakeholder insights, revealed a "Starting" maturity level characterized by reactive practices and misalignment with institutional goals. Strengths were noted in staff professionalism and training (Learning and Growth: 2.82), while weaknesses emerged in budget responsiveness (Financial Perspective: 2.58). Facility challenges, including inadequate space, outdated equipment, and inconsistent maintenance, significantly affect operations and user satisfaction. To address these, the study recommends adopting a digital reporting system to streamline issue management, improve accountability, and enhance responsiveness. Practical implications include infrastructure modernization, increased funding for maintenance, and establishing a General Services Office to align facility management with institutional growth objectives.

Keywords: Balanced scorecard; Digital reporting; Educational institutions; Facility management; Process optimization

1.0 Introduction

Facility management is a cornerstone of ensuring educational institutions operate efficiently, providing a safe and conducive environment for learning (Aceves-Avila & Berger-García, 2019). It encompasses services such as building maintenance, utility management, and safety compliance, all of which directly influence the quality of education and operational efficiency (Opoku & Lee, 2022). A well-maintained infrastructure not only minimizes disruptions but also enhances the overall learning experience, fostering a positive atmosphere for both students and staff (Santika et al., 2021). While the significance of facility management is evident at all educational levels, it becomes particularly critical in higher education, where institutions often deal with expansive campuses and specialized facilities.

Despite its importance, facility management frequently encounters challenges, particularly with manual reporting systems that delay issue resolution and heighten safety risks (Gingue, 2022). These systems often lead to inefficiencies, allowing minor maintenance concerns to escalate into significant disruptions, impacting daily operations and campus safety (Okafor & Onuoha, 2016). Furthermore, budget constraints and resource limitations compound the problem, resulting in deferred repairs and deteriorating facilities (Aceves-Avila & Berger-García, 2019). Such challenges contribute to safety hazards, reduced engagement, and increased operational costs (Munajat Zurainan et al., 2021).

Digital tools have emerged as a transformative solution, enabling real-time reporting and efficient tracking of maintenance issues (Santos & Jocson, 2024). Systems like Google Forms facilitate streamlined communication, offering automated notifications, centralized data storage, and mobile accessibility (Dulguun, 2023). These tools empower institutions to transition from reactive to proactive maintenance, improving response times, accountability, and cost-effectiveness (Ramos et al., 2024). Despite the widespread adoption of digital solutions in corporate and large educational institutions, their application in smaller, resource-constrained settings remains underexplored.

Holy Cross College in Santa Rosa, Nueva Ecija, serves as the focal point of this study, exemplifying the challenges of manual facility management reporting. This research evaluates the institution's current practices, identifies areas for improvement, and proposes a digital, forms-based reporting system to address inefficiencies and enhance safety. By integrating digital tools, the study aims to establish a more effective maintenance process. The study's broader implications lie in its potential to provide a replicable model for mid-sized educational institutions. While digitalization has been extensively studied in larger settings, this research explores its scalability and adaptability for smaller institutions, contributing valuable insights to the field.

2.0 Methodology

2.1 Research Design

This study employed a sequential explanatory research design to assess facility management performance at Holy Cross College, Sta. Rosa, N.E., aiming to support the development of a digital forms-based reporting process. The design involved two phases: first, quantitative data were collected through a facility management maturity assessment and a Likert scale survey to measure performance; second, qualitative data were gathered via open-ended questions to explore participants' perceptions, challenges, and recommendations.

2.2 Research Participants

A purposive sampling method was used to select participants. This approach ensured that the respondents had direct experience and familiarity with the institution's facility management processes, allowing for accurate and relevant data collection. The sample included 44 employees directly involved in or impacted by facility management at Holy Cross College.

2.3 Research Instruments

This study utilized two primary data-gathering instruments to assess the facility management system at Holy Cross College comprehensively. The first instrument was the 20-item facilities management maturity assessment adopted from ServiceChannel (2023), which measured the overall maturity level of the facility management processes at the institution. The second instrument was a Likert scale survey specifically designed to capture the perceptions and experiences of faculty members, administrative staff, maintenance personnel, and students regarding facility management performance at Holy Cross College. Open-ended questions were also included to gather qualitative responses on the implications, challenges, and recommendations for facility management. This allowed for a deeper understanding of the nuances and context surrounding facility management practices, complementing the quantitative data collected through the structured instruments.

2.4 Data Analysis

Weighted mean and thematic analysis were used for the data analysis. A weighted mean approach was used to address questions related to facility management maturity and performance across the four BSC perspectives (financial, customer, internal process, and learning and growth). This allowed greater weight to responses based on their importance or relevance to specific aspects of facility management. This technique highlighted how

different stakeholder groups perceived each perspective and identified key performance areas. Qualitative responses were analyzed using thematic analysis for questions concerning the implications of facility management performance on campus operations and respondents' recommendations for improvement. This method involved identifying, analyzing, and interpreting patterns within the qualitative data, capturing the depth of participant experiences, perceived challenges and suggested improvements. Thematic analysis revealed insights into how current practices affected daily operations and guided recommendations for a digital forms-based reporting process.

2.5 Ethical Considerations

Ethical guidelines were strictly followed throughout the research process. Participants were informed of the study's purpose, procedures, and their voluntary participation, and informed consent was obtained. Confidentiality and anonymity were ensured, with data securely stored and only used for research purposes. These measures safeguarded the participants' rights and privacy, ensuring the ethical integrity of the research.

3.0 Results and Discussion

3.1 Financial Management Performance

Financial Perspective

The Financial Perspective yielded a general weighted mean of 2.58 (Agree), indicating that participants find resource allocation for facility maintenance satisfactory (see Table 1). However, the relatively low score for addressing facility-related issues quickly (2.39, Disagree) reveals inefficiencies in responsiveness. This aligns with the findings by Zheng et al. (2021), emphasizing that financial delays can hinder operational sustainability and affect long-term institutional growth. Improvements in funding prioritization and timely response mechanisms are essential to enhance financial performance.

Table 1. *Weighted mean of financial perspective*

Indicators	Mean	SD	Interpretation
1. The school allocates sufficient resources for facility maintenance.	2.70	0.55	Agree
2. Facility-related issues that need funding are addressed quickly.	2.39	0.71	Disagree
3. Facility services are delivered cost-effectively without compromising quality.	2.65	0.70	Agree
4. Spending priorities for campus facilities align with overall college needs.	2.65	0.76	Agree
5. I am satisfied with using financial resources for campus facility upkeep.	2.52	0.83	Agree
General Weighted Mean	2.58	0.63	Agree

Customer Perspective

The Customer Perspective scored a weighted mean of 2.72 (Agree), suggesting that facility services meet users' basic needs and contribute to a productive academic experience (see Table 2). However, addressing feedback and ensuring consistent safety (2.65, Agree) still needs attention. Research highlights that customer-centric approaches, including proactive service adjustments and feedback integration, improve user satisfaction and institutional reputation (Bennett, 2024).

Table 2. *Weighted mean of customer perspective*

Indicators	Mean	SD	Interpretation
1. Facility services meet my needs and expectations.	2.65	0.64	Agree
2. Facility conditions are conducive to a productive academic experience.	2.78	0.66	Agree
3. Campus users feel safe and comfortable in all facility areas.	2.65	0.70	Agree
4. The quality of facility services enhances the college environment.	2.87	0.61	Agree
5. I am satisfied with how my feedback about facilities is addressed.	2.65	0.70	Agree
General Weighted Mean	2.72	0.57	Agree

Internal Processes Perspective

As shown in Table 3, the Internal Processes Perspective achieved a weighted mean of 2.70 (Agree), showing strengths in timely issue resolution and clear reporting methods (2.91, Agree). However, gaps in preventive maintenance practices (2.78, Agree) point to a reactive management approach. Ambrogio et al. (2022) emphasize that incorporating digital tools into facility management can improve efficiency, minimize disruptions, and shift towards a proactive maintenance style.

Table 3. Weighted mean of internal processes perspective

Indicators	Mean	SD	Interpretation
1. Facility issues are addressed promptly.	2.61	0.77	Agree
2. Maintenance work is scheduled with minimal disruption.	2.65	0.64	Agree
3. Reporting methods are clear and easy to use.	2.91	0.50	Agree
4. Preventive maintenance practices are regularly followed.	2.78	0.66	Agree
5. I am satisfied with how facility management handles issues on campus.	2.57	0.72	Agree
General Weighted Mean	2.70	0.56	Agree

Learning and Growth Perspective

The Learning and Growth Perspective garnered the highest score with a general weighted mean of 2.82 (Agree), reflecting strong staff professionalism and adequate training (2.87, Agree). Despite this, the need for continuous professional development and the adoption of modern digital tools remains. Abulibdeh et al. (2024) stress that investing in staff growth and technological integration is critical to keeping pace with evolving facility management demands.

Table 4. Weighted mean of learning and growth perspective

Indicators	Mean	SD	Interpretation
1. Facility management staff are knowledgeable in their roles.	2.87	0.61	Agree
2. Facility staff receive adequate training for their responsibilities.	2.83	0.64	Agree
3. Facility staff are capable of handling current facility challenges.	2.78	0.66	Agree
4. Facility staff are professional in their interactions with the campus community.	2.87	0.61	Agree
5. I am satisfied with the development of facility management services.	2.74	0.68	Agree
General Weighted Mean	2.82	0.54	Agree

Summary

The combined general weighted mean of 2.71 (Agree) across all Balanced Scorecard perspectives indicates satisfactory performance. The highest score in Learning and Growth suggests strengths in personnel capacity, while the lower score in Financial Perspective highlights inefficiencies in budget allocation and responsiveness. These findings highlight the need for targeted improvements in financial management, proactive maintenance, and customer engagement to elevate overall performance. Studies advocate leveraging technology and staff development to address these gaps and ensure sustainable, user-focused facility management (Bennett, 2024; Zheng et al., 2021).

Table 5. Summary of Financial Management Performance

Area	Mean	SD	Interpretation
Financial Perspective	2.58	0.63	Agree
Customer Perspective	2.72	0.57	Agree
Internal Processes Perspective	2.70	0.56	Agree
Learning and Growth Perspective	2.82	0.54	Agree
General Weighted Mean	2.71	0.54	Agree

3.2 Implications of Current Facility Management Performance

Table 6 revealed that current facility management performance at Holy Cross College presents several challenges, particularly regarding facility adequacy, maintenance, and accessibility. These issues significantly impact daily operations and the overall campus environment. Inadequate Facilities encompasses the recurring issue of insufficient laboratory and classroom spaces, severely limiting the institution's capacity to deliver quality education, especially in science-related courses. Respondents also cited inadequate air conditioning and outdated facilities, compromising comfort and hindering focus. These findings align with Fomba et al. (2023), who emphasize that inadequate infrastructure negatively impacts student and faculty performance, reducing institutional effectiveness.

The lack of tambayan areas, insufficient comfort rooms (CRs) for faculty and students, and temperature regulation issues emerged as significant concerns. These shortcomings affect students' ability to relax and regroup, while faculty members face challenges finding exclusive break spaces. Addressing these gaps is crucial for fostering a more welcoming and functional campus environment. Participants recognized some improvements, such as the construction of a gym and the cleanliness of existing facilities. However, these developments were seen as isolated

successes that failed to address the broader systemic issues. The limited scope of these advancements underscores the need for more comprehensive and integrated solutions to improve campus facilities.

Table 6. *Identified themes on the implications of current facility management performance*

Question	Themes	Codes
How does the current state of campus facilities impact your daily activities at the campus?	Inadequate Facilities	Limited laboratory and classroom space, insufficient air conditioning, outdated facilities
	Lack of Comfort and Accessibility	Absence of tambayan areas, insufficient CRs for faculty and students, temperature issues
	Partial Positives	Gym improvements, cleanliness of usable facilities
	Learning Environment Challenges	Inefficiency in work/study due to facility limitations
Are there specific facility-related issues that affect your experience on campus?	Maintenance and Upkeep Issues	Insufficient aircon maintenance, inconsistent internet, outdated equipment
	Safety and Accessibility	Lack of emergency exits, poor ergonomics in faculty chairs
	Resource Limitations	Limited library and canteen space, absence of waiting/tambayan areas
	Development Needs	Need for workshops, updated laboratory materials, and new equipment.

Facility limitations, such as overcrowded spaces and outdated equipment, were noted to detract from the overall learning environment. Respondents described how these issues affect productivity and academic performance, emphasizing the necessity for improvements that promote effective teaching and learning. Participants highlighted inconsistent maintenance of air conditioning units, outdated equipment, and poor upkeep of comfort rooms. Morocco and Garofolo (2021) advocate integrating digital tools and regular maintenance as essential strategies for reducing disruptions and optimizing facility management. Addressing these issues would significantly improve the campus experience.

Safety concerns were frequently mentioned, including the lack of emergency exits and ergonomic furniture. These deficiencies compromise physical safety and affect the comfort and productivity of students and faculty. As recommended by Gaza et al. (2024), user-centric approaches to facility design are essential for creating a safe and accessible campus environment. The limited availability of library and canteen spaces and the absence of waiting or tambayan areas highlight the inadequacy of current campus resources. Expanding these spaces would enhance the overall campus experience, providing students and faculty with essential amenities for daily use.

Respondents expressed the need for workshops, updated laboratory materials, and new equipment to improve academic delivery and practical learning. Addressing these development needs is critical for ensuring facilities meet modern educational demands and standards. The current state of facility management affects operational efficiency and the overall campus experience. Inefficient facilities impede educational delivery, compromise safety and comfort, and create barriers to effective teaching and learning. The absence of well-maintained and adequately equipped spaces reduces productivity and morale among students and faculty.

3.3 Recommendations for Improvement

As shown in Table 7, respondents highlighted several key areas requiring improvement to address facility management challenges at Holy Cross College. Among these, infrastructure upgrades emerged as a dominant theme. Suggestions included expanding laboratory spaces to accommodate the growing student population, creating tambayan areas, and updating equipment in classrooms, laboratories, and the library. Improving air conditioning systems and adding ergonomic furniture were also commonly mentioned to enhance comfort and productivity. These recommendations align with studies emphasizing the role of well-maintained infrastructure in promoting academic success and student satisfaction (Bueno, 2023).

Resource allocation was another critical concern, with calls for increased funding for maintenance and equipment upgrades. Respondents also emphasized the need for regular maintenance practices, including routine checks and faster processing of repair requests. Delegating responsibilities to a dedicated General Services Office was proposed to improve efficiency and accountability in facility management. Respondents also recognized the potential of digital tools in enhancing facility management processes. Suggestions included developing mobile

applications and online portals for reporting and monitoring maintenance issues. These systems could streamline communication between stakeholders and enable real-time updates on the status of requests. Implementing project management tools for budget tracking and resource allocation was another recommendation to ensure transparency and accountability. Additionally, the need for improved communication channels was emphasized, with respondents proposing mechanisms for providing feedback and updates on facility concerns. Studies support the effectiveness of digitalization in improving operational efficiency and decision-making in facility management (Atta & Talamo, 2020).

Table 7. *Identified themes in the recommendations for improvement*

Question	Themes	Codes
Based on your experiences, what improvements would you suggest for campus facilities?	Infrastructure Upgrades Comfort and Accessibility Maintenance Practices Resource Allocation	Expanded laboratories, larger canteen, better audio-visual rooms, ergonomic furniture. Tambayan areas, exclusive CR for faculty, improved classroom air conditioning. Delegation to maintenance officers, daily checks, quicker repair response. Increased funding for maintenance, updated equipment, and facility improvements.
Are there digital tools or processes that would improve the reporting or resolution of facility issues?	Policy and Personnel Digital Reporting Tools Project Management Communication Channels Surveillance and Safety	Establish a General Services Office; hire and train utility staff. Mobile apps, online portals, computerized reporting, and monitoring systems. Budget allocation and tracking systems; clearer reporting and log flow. Feedback and update mechanisms for facility concerns. CCTV systems for enhanced security and monitoring.

3.4 Proposed Digital Forms-Based Reporting Process

To address the challenges in facility management at Holy Cross College, the study proposes integrating a digital forms-based reporting process that uses software to be developed into the facility management workflow. This process solution aims to streamline the reporting, tracking, and resolution of facility-related issues, replacing traditional paper-based methods with a system that enhances communication, transparency, and efficiency.

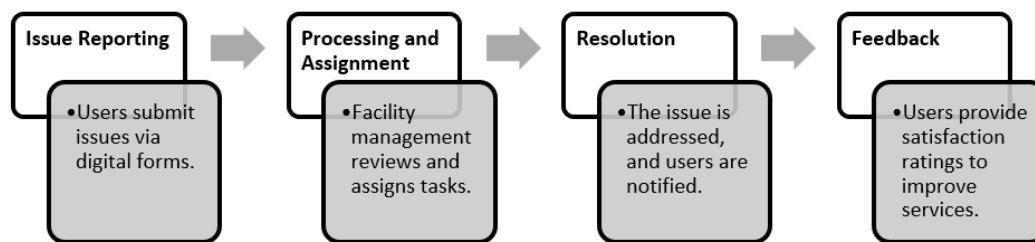


Figure 1. *Proposed digital forms-based reporting process*

The proposed digital forms-based reporting workflow aims to streamline and enhance the facility management process at Holy Cross College. The workflow begins with issue reporting, where users submit issues through digital forms. This method ensures that problems are accurately recorded and categorized, reducing human error and delays in the reporting process. Research has shown that digital tools, such as apps or online portals, significantly improve the efficiency of issue identification and user participation, making the reporting process more accessible and user-friendly (Northmore & Hudson, 2022). Once an issue is reported, it enters the processing and assignment phase, where facility management reviews the reported problem and assigns it to the appropriate personnel for resolution. By leveraging digital systems, tasks can be quickly assigned and tracked, ensuring that urgent issues are addressed promptly. This approach enhances the efficiency of operations, as digital tools allow

for real-time updates and tracking of task status, reducing response times and ensuring accountability (Ngcobo et al., 2024).

In the resolution phase, the assigned personnel work on fixing the reported issue, and users are notified once the problem has been addressed. This ensures transparency and keeps users informed about the progress of their reported issues. Timely resolution of issues contributes to minimizing disruptions and improving overall user satisfaction, as users experience fewer delays in their daily activities (Rane et al., 2023). Finally, the feedback phase allows users to rate their satisfaction with the resolution process. This feedback is crucial for continuous improvement, as it provides insights into the effectiveness of the facility management services and highlights areas for further enhancement. By incorporating user feedback into the workflow, facility management can address recurring problems and refine their processes over time, leading to more efficient and responsive operations (Chen & Tsai, 2021). Overall, this proposed workflow fosters a proactive approach to facility management by improving reporting accuracy, task assignment, issue resolution, and user satisfaction. By embracing digital tools, Holy Cross College can significantly enhance the quality of its facility management services, ensuring a more efficient, transparent, and user-centered approach to maintaining campus facilities.

4.0 Conclusions

The Facility Management Maturity Assessment and Financial Management Performance evaluation findings at Holy Cross College underscore the critical need for modernizing facility management practices. The "Starting" maturity level indicates a predominantly reactive approach, characterized by paper-based processes and minimal data integration. These limitations hinder operational efficiency, delay maintenance resolution, and restrict the institution's ability to make informed, data-driven decisions. Transitioning to digital tools and systems is a pivotal step toward addressing these challenges, enhancing transparency, and enabling more effective resource management. The evaluation of financial management performance through the Balanced Scorecard perspective revealed adequate resource allocation. However, it highlighted inefficiencies in key areas, including facility-related funding, delayed repairs, and inconsistent user-centered practices. These gaps indicate the need for a more proactive strategy that prioritizes timely interventions and integrates user feedback into decision-making. Aligning with existing literature, the findings reaffirm the role of effective facility management in promoting academic success, ensuring operational sustainability, and supporting long-term institutional growth.

Current issues, such as limited space, outdated equipment, and insufficient maintenance practices, significantly impact the campus environment and overall learning experience. These findings emphasize the urgency of adopting a systematic, digital-driven facility management process. The proposed digital forms-based reporting system, augmented by project management tools and enhanced communication channels, offers a practical and scalable solution to streamline operations, reduce inefficiencies, and improve user satisfaction. In conclusion, embracing digital transformation and prioritizing infrastructure upgrades and regular maintenance will enable Holy Cross College to transition from reactive to proactive facility management. This shift will optimize operational efficiency and foster a safer, more user-friendly campus environment, ultimately enhancing learning outcomes and driving sustainable institutional growth.

Several strategic recommendations are crucial to enhance facility management at Holy Cross College. First, adopting digital tools for reporting and tracking issues is essential. Transitioning from paper-based methods to digital platforms such as mobile apps or online portals would improve communication, streamline workflows, and allow for more accurate tracking of maintenance requests. This shift could lead to faster response times and higher user satisfaction by providing real-time updates on the status of reported issues. Second, significant investment in infrastructure upgrades is necessary, particularly in expanding laboratory spaces, enhancing classroom and laboratory equipment, and improving air conditioning systems. These improvements are vital for addressing space constraints and ensuring students' and faculty's comfort and productivity. Additionally, facility management practices must be enhanced by implementing preventive maintenance schedules and quicker response times to resolve recurring issues, such as inconsistent air conditioning and outdated equipment. Preventive maintenance is proven to reduce long-term costs and disruptions. Increased resource allocation for maintenance and facility improvements is also critical. Allocating more funding to upkeep and new equipment would prevent delays in addressing facility-related problems and ensure the availability of updated resources.

Moreover, strengthening communication channels through feedback mechanisms and improving transparency in the issue-resolution process would foster a more responsive and accountable management system.

Another key recommendation is establishing a dedicated General Services Office (GSO) to centralize facility management tasks. This would enhance coordination, task delegation, and accountability, leading to more efficient management. Implementing these changes would significantly improve the overall experience of campus users, aligning with global best practices in facility management. In terms of future research, exploring the long-term impact of digital tools on facility management efficiency could offer valuable insights. Research could focus on comparing digital versus traditional systems regarding speed, accuracy, and user satisfaction. Additionally, studies on the effectiveness of preventive maintenance in educational institutions and the impact of infrastructure upgrades on academic performance could contribute to evidence-based strategies for improving facility management. Further research into the role of sustainability in facility management—such as energy-efficient systems or eco-friendly designs—could also be an important area for future exploration. Understanding the broader implications of these recommendations could help formulate more sustainable, cost-effective solutions for academic institutions.

5.0 Contributions of Authors

The authors confirm the equal contribution in each part of this work. All authors reviewed and approved the final version of this work.

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All authors declare that they have no conflicts of interest

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Love of the Lotus: Exploring Romantic Relationships Among Adult Survivors of Childhood Sexual Abuse

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Abstract. This study delved into the unique challenges faced by survivors of childhood sexual abuse (CSA) in forming and maintaining romantic relationships. Romantic relationships, characterized by emotional connections and affection, are crucial for well-being, but CSA can lead to significant psychological effects, including PTSD, anxiety, and difficulties with trust and intimacy. In the Philippines, approximately 7 million children experience sexual abuse annually, underscoring the urgency of addressing this issue. The study was guided by Attachment Theory, which explains how early interactions with caregivers influence emotional and social growth, impacting the ability to form secure relationships in adulthood. Employing a qualitative research design, the Interpretative Phenomenological Approach (IPA) was used to gather in-depth personal narratives from five adult survivors in long-term romantic relationships. Participants were recruited through snowball sampling and interviewed using semi-structured questionnaires via videoconferencing. The findings revealed ten (10) emergent themes: Holistic Bonding Practices; Trust Issues, Emotional Guardedness; Intimacy Barriers and Anxieties; Post-Traumatic Trust and Intimacy Challenges, Insecure Attachments and Growth; Selective Disclosure and Cautious Communication; Effective Communication and Emotional Connection; Emotional Regulation Within Relationships; Constructive Relational Dynamics; and Setting boundaries, Strength, and Resiliency. Despite the significant impact of past trauma, survivors exhibited remarkable resilience and potential for growth within their romantic relationships. Key coping strategies were identified as effective communication, emotional regulation, and boundary setting. The study emphasized the need for trauma-informed therapy, education for romantic partners, community support, and policy changes to foster healing and empowerment for CSA survivors.

Keywords: Adult survivors of CSA; Child sexual abuse; Romantic relationships

1.0 Introduction

In the murky depths of adversity, the lotus flower rises, defying the odds to blossom into a symbol of resilience, strength, and transformation. Much like the lotus, survivors of childhood sexual abuse (CSA) navigate the dark, muddy waters of their past traumas, striving to bloom in the light of new, healthy relationships. Their journey mirrors the lotus's ascent from the mud to bloom with purity and grace, symbolizing the potential for growth, healing, and beauty even in the most challenging circumstances. As it was, romantic relationships are emotional connections between individuals characterized by affection, love, intimacy, and companionship. These connections typically involve couples with a deep emotional bond and mutual affection. Romantic relationships, while taking various forms and sometimes leading to long-term commitments like marriage, are defined by the pursuit of romantic connection and emotional intimacy (Gómez-López et al., 2019). Partners engage in shared activities, create memories, and offer mutual support, fostering emotional closeness and vulnerability – key

aspects of healthy relationships. However, for survivors of CSA, these dynamics can become significantly more complex.

Additionally, recent studies have explored the extensive and interconnected effects of CSA on survivors, revealing profound impacts on mental health, interpersonal relationships, self-concept, and coping mechanisms. Rothman et al. (2021) documented significant and lasting effects, including depression, anxiety, and impaired psychosocial functioning among survivors. MacGinley et al. (2019) identified shame as a pervasive barrier to self-esteem and disclosure, while McTavish et al. (2019) linked delayed disclosure to a higher risk of PTSD. Survivors often struggle with revictimization, especially those with psychiatric disorders like PTSD (Mazarello et al., 2022; Papalia et al., 2021). Noll (2021) emphasized the role of biological, psychological, and environmental factors in contributing to long-term psychopathology in CSA survivors.

Furthermore, the impact of CSA on romantic relationships is equally significant. Survivors face challenges such as sexual shame and attachment issues, which affect relationship satisfaction (Barker et al., 2022). Attachment styles, like anxious and avoidant types and conflict resolution strategies, are shaped by the trauma of CSA (González-Ortega et al., 2021; Vitek & Yeater, 2021). Sexual dysfunction, often rooted in psychological distress, is another common consequence of CSA (Gewirtz-Meydan, 2022; Gewirtz-Meydan & Opuda, 2022). Moreover, sexual self-concept and identity play crucial roles in shaping survivors' sexual well-being and relationship satisfaction (Astle et al., 2023). Baumann et al. (2020) highlighted that a supportive relationship can help mitigate sexual difficulties, while Easton (2019) underscored the benefits of early disclosure in improving mental health outcomes.

In addition to mental health challenges, CSA survivors face barriers to developing trust, vulnerability, and intimacy within romantic relationships. Their emotional scars often manifest in difficulties with trust, anxiety, and communication, leading to conflicts and misunderstandings. Survivors may struggle with low self-esteem, sexual difficulties, and heightened anxiety, all of which can strain romantic relationships. Bates-Duford (2019) noted that survivors' emotional reactions linked to trauma often complicate relationship dynamics, contributing to emotional distress and, in many cases, depression. Trust, effective communication, and constructive conflict resolution become even more crucial for survivors as they navigate the complex emotional landscape of their relationships. Despite these challenges, therapeutic approaches and social support systems have been shown to foster resilience and healing in survivors. Mindfulness, compassion-based interventions, and narrative couples therapy contributed to post-traumatic growth and relationship satisfaction (Francis-Laughlin & Rusca, 2020; Westerman et al., 2020). Additionally, the presence of supportive partners can play a significant role in the healing process, offering emotional security and facilitating the development of healthier attachment styles. However, the role of intimate partners in either supporting or hindering recovery is not fully understood, indicating a significant gap in the literature.

This study aims to address these gaps by exploring the lived experiences of adult survivors of childhood sexual abuse in the context of long-term romantic relationships. Focusing on the dynamics within these relationships seeks to understand how survivors and their partners overcome the challenges posed by CSA. The research also aims to identify coping mechanisms and the role of intimate partners in the healing journey, to contribute to the creation of more effective support systems and interventions. Ultimately, this study aspires to offer a deeper understanding of the complexities of romantic relationships for CSA survivors, helping to promote long-term resilience, mental health, and well-being.

2.0 Methodology

2.1 Research Design

The study employed a qualitative research design using an interpretative phenomenological approach. As Tenny et al. (2022) describe, qualitative research is well-suited to exploring in-depth human experiences and social processes, making it ideal for understanding the complex phenomenon of how adult survivors of childhood sexual abuse (CSA) navigate romantic relationships. This method relies on interviews and observations to uncover meanings and patterns within the lived experiences of survivors, emphasizing the need for a deep, nuanced understanding.

To delve into these experiences, the study utilized the Interpretative Phenomenological Analysis (IPA) approach, which is designed to identify patterns within groups. This approach allowed the researcher to understand the intricate dynamics of romantic relationships of CSA survivors, as it is especially well-suited to studying the personal and emotional experiences central to the phenomenon under investigation.

2.2 Research Locale

This study focused on adult CSA survivors in long-term romantic relationships lasting over three years. Participants were recruited primarily through referrals from support groups and clinics, ensuring trust and privacy. The interviews were conducted online using platforms like Google Meet, providing flexibility and enabling participants to engage from the comfort of their own homes. This virtual environment promoted openness and a sense of security, key elements in discussing sensitive personal experiences.

2.3 Research Participants

The study focused on adults who had experienced sexual abuse during childhood and were currently in romantic relationships lasting at least three years. A snowball sampling method was employed due to the topic's sensitive nature. Initial participants, identified through referrals from clinics and support groups for CSA survivors, were asked to recommend other individuals who met the criteria. Snowball sampling provided a trustworthy and ethically sensitive way to reach participants while ensuring their shared background in CSA and long-term romantic relationships.

This sampling approach also promoted a sense of community and trust among participants. By recruiting through trusted referrals, participants were more likely to feel comfortable, and confidentiality was maintained throughout the process. The method aligned with ethical standards, as it avoided invasive inquiries about participants' past abuse experiences while ensuring they fit the study criteria (Parker et al., 2019). Following Creswell and Guetterman (2019), the study included five (5) participants, all adult female survivors of CSA currently in romantic relationships exceeding three years. The participants were selected for their potential to offer insights into the challenges and resilience of navigating intimate relationships as CSA survivors.

The table below provides a summary of the participant's profiles:

Table 1. Participants of the study

Participant	Gender	Age	Length of Current Relationship	Age at the Time of CSA
KM	Female	30	8	7 years old
MG	Female	26	9	14 years old
MA	Female (LGBTQ+)	24	3	13 years old
PM	Female	28	5	15 years old
PJ	Female	23	6	8 years old

2.4 Research Instrument

A semi-structured interview instrument was employed to examine participants' lived experiences, focusing on their romantic relationships. The instrument consisted of ten open-ended questions to explore critical dimensions of participants' relational dynamics, including attachment styles, trust, intimacy, communication patterns, and resilience. To ensure the instrument's rigor, the interview guide underwent a validation process conducted by five experts specializing in clinical psychology, trauma-informed care, relationships, and research. This process aimed to confirm the questionnaire's clarity, relevance, and content validity. Key themes addressed in the guide included attachment styles and emotional bonds, trust and vulnerability in relationships, the influence of early romantic experiences on current dynamics, communication challenges, and the role of coping mechanisms and personal growth in romantic partnerships. The validation employed the Lawshe formula to calculate the Content Validity Ratio (CVR), which yielded a perfect score of 1.0 for all items. This result indicated that every question effectively measured the constructs it intended to assess, reinforcing the instrument's reliability and alignment with the study's objectives (Dovetail, 2023).

2.5 Data Gathering Procedure

The study's data-gathering procedure employed social media for participant recruitment and videoconferencing applications, such as Google Meet, for conducting interviews. Recruitment began with referrals sourced from social media, clinics, and support groups for individuals with histories of childhood sexual abuse. Clear information regarding the study's purpose and eligibility criteria was disseminated across these platforms, and

informed consent was obtained from participants meeting the criteria. Recruitment materials emphasized the voluntary nature of participation, confidentiality measures, and the importance of their contributions to the research.

Interviews were scheduled based on participant availability, utilizing secure and private video conference sessions to overcome geographical limitations and foster a relaxed environment conducive to open communication. Videoconferencing was chosen for its practical advantages, including ease of scheduling, participant comfort, and integrated recording features for data accuracy. Participants were provided with a pre-interview briefing to address technical concerns. The informed consent process was reiterated at the start of each session, and participants were allowed to withdraw at any time without penalty. The interviews followed a semi-structured protocol to encourage participants to share their experiences openly. Recordings, conducted with participant consent, enabled precise transcription, which was subsequently analyzed qualitatively to derive insights while maintaining strict confidentiality and anonymity. Transcriptions underwent iterative analysis using Qualitative Data Analysis (QDA) Miner Lite software, facilitating systematic coding, theme identification, and the development of a comprehensive understanding of participants' experiences.

2.6 Ethical Considerations

The researcher, despite being employed at an institution specializing in supporting victims of sexual abuse, did not recruit participants from the institution's client base, ensuring an independent participant pool. Referrals from clinics and other participants were used to verify eligibility, avoiding direct inquiries into participants' histories of abuse. This method preserved privacy, reduced re-traumatization risk, and prioritized participant comfort. Participants were thoroughly informed about the study's goals, processes, and potential risks or benefits. Informed consent was continuously obtained throughout the study, and confidentiality was strictly maintained through pseudonyms and secure data management. The research focused on participants' current romantic relationships and the impact of past experiences, emphasizing resilience, coping mechanisms, and personal growth rather than revisiting detailed accounts of past traumas. Ethical standards were rigorously upheld, with cultural sensitivity employed to mitigate bias and respect participants' diverse backgrounds. The researcher fostered a supportive environment, ensured voluntary participation, and promptly addressed concerns. Findings were transparently reported, contributing meaningful insights to the field while maintaining the dignity and well-being of the participants.

3.0 Results and Discussion

3.1 Theme A: Holistic Bonding Practices

In exploring how participants maintained emotional bonds in their romantic relationships, the theme of Holistic Bonding Practices emerged, underscoring the importance of specific bonding behaviors like physical touch, acts of service, verbal affirmations, quality time, and open communication. These practices serve as the foundation for intimate connection and underscore the universal human need for closeness. This theme aligns with Adult Attachment Theory, which posits that early caregiving experiences shape one's approach to relationships in adulthood and that secure attachment involves comfort with intimacy, autonomy, and effective communication (Gause et al., 2022). Participants' emphasis on physical touch, verbal affirmations, and open communication resonates with secure attachment principles, promoting emotional attunement, responsiveness, and accessibility within romantic partnerships.

Individual experiences further illuminated this theme. KM, for instance, attributed her comfort with physical touch to her affectionate family background, explaining, *"Yung family background ko kasi... close rin kami sa isat-isa, yung nanay tyaka tatay ko very maalaga rin sa amin. Even our relatives, close talaga kami."* She noted that affectionate gestures were essential in her romantic relationship, sustaining her emotional connection with her partner. MG, in turn, highlighted how pairing physical touch with acts of service strengthened her bond with her partner. She explained, *"Ayoko na ma-feel niya na nakakalamang ako in terms sa favor niya sakin na siya yung mas maraming nagagawa for us in terms of the acts of services sa bahay."* Similarly, MA described combining words of affirmation, quality time, and gift-giving as a multifaceted approach to fulfilling various emotional needs. PM spoke about the significance of effort, listening, and openness in building trust, stating, *"I make a conscious effort to be present in the relationship, listening attentively to my partner's thoughts and feelings, and expressing my own openly and honestly."* For PJ, transparency, open communication, and resilience were critical, allowing her and her partner to navigate

challenges together. She described her approach to communication as more than an exchange; it is a commitment to nurturing their emotional connection: *"It is not just about communication; it is a commitment to nurturing our emotional connection. When my partner does something that touches me, I express my gratitude and love wholeheartedly."* These findings resonate with existing literature on relationship satisfaction and emotional bonding among survivors of childhood adversity. Research by Vaillancourt-Morel et al. (2021) found that survivors often struggle with lower perceived partner responsiveness and relationship satisfaction; however, proactive communication and resilience can mitigate these challenges. This study similarly indicates that participants who engage in open communication, quality time, and resilience-building practices can foster emotional bonds despite past trauma.

3.2 Theme B: Trust Issues and Emotional Guardedness

The impact of past sexual abuse on participants' ability to form and maintain emotional bonds in relationships was profound, particularly in terms of trust deficits and emotional guardedness. Grounded in Adult Attachment Theory, which posits that early adverse experiences can lead to insecure attachment styles marked by anxiety and avoidance (Civilotti et al., 2021), the findings illustrate how childhood sexual abuse (CSA) shaped survivors' emotional openness and capacity for connection with their partners. Participants recounted how intrusive memories and flashbacks resurfaced during intimate situations, triggering emotional distress and hesitation. For instance, KM described the persistent impact of her trauma, stating, *"I have forgiven him already. Pero, 'yung idea na nangyari saakin andoon padin. So, even if nagkaroon na ako ng boyfriend, matagal na kami, andoon pa rin siya hindi siya nawawala."* Similarly, MG shared her struggle with intimacy, explaining, *"...emotions ko during yung period nung 'nag-aano' kami. Minsan nai-iba, parang feeling ko iba yung 'umaano' sa'kin, ganyan. Na-iba yung image."* These experiences often led to a conflict between the desire for connection and the discomfort triggered by past trauma, resulting in emotional withdrawal and guarded behavior.

Participants also described persistent feelings of fear, anxiety, and mistrust as obstacles to forming relationships. MA shared how the betrayal inherent in her abuse fostered deep mistrust, saying, *"I find it challenging to trust men with my emotions, leading to guardedness and reluctance to open up."* This pervasive mistrust often led to emotional distance, as survivors anticipated betrayal and relied on self-protective strategies such as maintaining emotional walls to avoid vulnerability. PM explained, *"As a result, I approached relationships with a guarded heart, doubting the intentions of those I encountered,"* highlighting the difficulty of achieving meaningful connections. Diminished self-esteem further complicated survivors' relationships, as many participants linked their feelings of unworthiness to the lasting effects of CSA. PJ noted, *"The trauma distorted my view of relationships and boundaries, making it difficult to engage openly. The experience also affected self-esteem, making it hard to accept love and affection."* These internalized negative perceptions perpetuated cycles of insecurity and emotional detachment, hindering their ability to engage openly with partners.

These findings align with the broader literature on CSA's impact on adult relationships, supporting the work of Bates-Duford (2019), who highlighted trust issues and emotional regulation difficulties as primary challenges for CSA survivors in intimate relationships. Additionally, Bates-Duford found that survivors' self-esteem issues often hindered relational dynamics, as diminished self-worth made it difficult for them to accept love and affection, a finding echoed in this study's participants.

3.3 Theme C: Intimacy Barriers and Anxieties

Responses to questions about challenges in building intimacy highlighted the complex, layered obstacles that survivors of childhood sexual abuse (CSA) face in forming close, intimate connections. The lasting impact of trauma often disrupts the development of such relationships, fostering mistrust and reinforcing pervasive negative emotions. Grounded in Adult Attachment Theory, the findings reveal that early trauma often leads to anxious or avoidant attachment styles, characterized by deep fears of intimacy and trust issues.

Participants described significant challenges with intimacy due to past trauma, particularly in physical closeness and emotional vulnerability. MA shared, *"There were moments that I avoided sexual contact altogether, which strained the intimacy in my relationship,"* illustrating how traumatic memories resurfaced during physical closeness, causing discomfort and tension. Similarly, KM expressed her struggle with sharing her past, saying, *"Even up until now, naiisip ko parin 'yung nangyari saakin before, hindi ako comfortable na I-kwento sa kaniya 'yun. Kasi paminsan naiisip ko*

siya, paminsan na a-anxious ako.” This hesitation to disclose past experiences created barriers to emotional connection.

MG echoed this sentiment, explaining her internal conflict, *“Kada naman ginagawa namin yung something doon sa relationship namin like sex, naiilang ako...ang tumatakbo roon sa isip ko is, ‘paano ko ba sasabihin sa kanya na may nangyari sa’king ganito?’”* This fear of judgment or misunderstanding often prevented participants from opening up fully. Trust, a foundational aspect of intimacy, was deeply compromised; as PM noted, *“Past traumas can erode trust in oneself and others. It becomes challenging to open up fully...to trust that your partner will understand and support you without judgment.”* These difficulties in establishing trust and openness sometimes led to dissatisfaction and frustration in their relationships.

These findings align with existing research on intimacy challenges for trauma survivors. Gewirtz-Meydan (2022) highlighted the common experience of physical intimacy struggles due to traumatic memory reactivation. Similarly, Castaneda (2020) emphasized that survivors’ reluctance to share traumatic experiences often inhibited intimacy due to fear of judgment and misunderstanding, supporting the current study’s findings regarding challenges in disclosure.

3.4 Theme D: Post-Traumatic Trust and Intimacy Challenges

Responses to questions on how past experiences shaped trust and connection in romantic relationships revealed enduring challenges with trust and intimacy, highlighting the profound psychological imprints of early trauma on survivors’ relational dynamics. These effects are consistent with Adult Attachment Theory, suggesting that adverse childhood experiences often lead to anxious or avoidant attachment styles that complicate adult relationships. Participants shared that trauma shaped their approach to trust, prompting heightened caution and defensive mechanisms to safeguard against potential emotional harm. For instance, PM described how her past experiences created a reluctance to fully invest emotionally, stating: *“Previous encounters of betrayal or disappointment have made me naturally cautious when it comes to opening up and trusting others.”* Similarly, PJ noted the ongoing process of navigating trust, explaining, *“It is an ongoing journey to learn to balance trust with caution and to recognize when my past experiences might be influencing my decisions in relationships.”*

Physical intimacy also proved challenging, as participants described how it could trigger distressing memories of past trauma. KM shared that intimate moments sometimes evoked past abuse, causing anxiety and withdrawal: *“Even if kapag gusto niya maging intimate, parang nag a-ask padin siya ng permission. Very respectful naman siya. ‘yun nga lang, kapag nga lang na ganoon na nag hi-hit siya, na ti-trigger siya.”* Survivors often relied on understanding partners to manage these emotional responses, underscoring the importance of sensitivity within the relationship. Concerns about being judged further compounded the difficulties in forming deep connections. Many participants hesitated to disclose their past experiences, fearing negative judgment or misunderstanding. MG conveyed this tension, stating: *“Noong nag si-simula palang kami, hindi nga ako makapag-sabi sakaniya ng nangyari saakin. Kasi nga fear of being judged explaining it kung bakit ganon...”* This reluctance to share deeply personal experiences created inner conflicts, as survivors yearned for genuine connection but held back due to fear of vulnerability. Lingering fears and insecurities were also prevalent among participants, reflecting the lasting psychological effects of trauma. MA articulated this sentiment, noting: *“My relationships with men left me with lingering fears and insecurities.”* Survivors often required frequent reassurance and validation from their partners, which placed emotional demands on the relationship as they navigated feelings of vulnerability.

The findings on lingering fears and insecurities align with Alix et al. (2019), who examined the role of social support for adult survivors of childhood sexual abuse (CSA). The study indicated that insecurities and fears of abandonment were prevalent among trauma survivors, often destabilizing their relationships. These insights support the present study’s observations that trauma’s lingering effects manifest as pervasive fears, insecurities, and trust issues, underscoring the importance of supportive, understanding partnerships to foster healing and emotional safety.

3.5 Theme E: Insecure Attachments and Growth

Participants’ reflections on early romantic relationships revealed a dominant theme of Insecure Attachments and Growth. This theme explores how past romantic involvements shaped their ability to trust, engage intimately, and

develop resilience and self-understanding. The accounts highlight how early experiences profoundly influenced relational patterns and emotional health, often as formative moments in Adult Survivors' lives that shaped their approach to later relationships. Many shared that while they could establish trust to some degree, they often hesitated when it came to physical intimacy. KM recounted, *"Nag t-trust din naman ako, nakapag-build din naman ako ng trust sakaniya. Pero, when it comes to the intimate part, 'yun 'yung medyo hindi."* This hesitation, often rooted in unresolved trauma, created challenges in balancing trust with vulnerability and hindered deeper emotional connections.

Some participants described how their partial ability to trust negatively affected their relationships. MG expressed concerns about disclosing personal trauma, fearing betrayal or exploitation: *"Hirap na hirap ako sumubok din ng ibang relationship to tell that story, kasi parang hindi ko nga sure kung ikaw na talaga. Mamaya ipag-kalat mo pa na meron nangyari pala saakin na ganito. So, nag take advantage ka pa saakin... lalo mo pang dagdagan 'yung sexual trauma ko."* This fear led to strained communication and barriers to forming stable, trusting bonds with their partners. Others recounted experiences of manipulation, control, and even abuse in past relationships, which left emotional scars that shaped future relational patterns. MA reflected, *"It involves various forms of manipulation, control, and abuse, making it difficult to maintain a healthy and balanced connection with my partner. The verbal and physical abuse had long-lasting effects on my mental and emotional well-being, leaving scars that impacted my future relationships and personal growth."* These negative encounters deeply influenced their attitudes toward trust and intimacy.

Feelings of insecurity and a lack of direction further complicated relationships for many participants. PM shared, *"This lack of direction impacted various aspects of the relationship, leading to misunderstandings, conflicts, and ultimately, failure... I found myself caught in a negative cycle of insecurity and toxicity, where my behaviors pushed my partners away, further reinforcing my feelings of inadequacy and worthlessness."* These struggles affected romantic connections and hindered personal development, perpetuating feelings of unworthiness. Despite these challenges, participants recognized the growth that emerged from these painful experiences. PJ highlighted this, stating, *"Despite the challenges, these experiences taught me about what I do and do not want in a relationship, paving the way for growth and learning in my current relationship."* These moments of self-reflection and resilience allowed participants to establish clearer boundaries and better understand their needs, forming a foundation for healthier relationships moving forward.

According to González-Ortega et al. (2021), early romantic experiences significantly impact attachment style and an individual's approach to intimacy. This research aligns with the current findings, highlighting that while adverse experiences may initially hinder trust and intimacy, overcoming these difficulties can foster resilience and self-understanding.

3.6 Theme F: Selective Disclosure and Cautious Communication

Participants' reflections on communication strategies in past relationships highlighted the importance of balancing openness and caution in building supportive romantic relationships, especially for individuals who have endured traumatic experiences like childhood sexual abuse (CSA). Many participants shared that while maintaining open communication on most topics, they were hesitant to disclose their CSA experiences due to fear of judgment or misunderstanding. KM expressed, *"Kapag may nararamdaman ako sinasabi ko... Pero, may reservations, which is 'yung about doon sa experience. Kapag related na roon, doon ako medyo hindi na nakapag-open, ng freely. Kasi, takot akong ma-brought up."* Others, like PM, noted initial difficulties in opening up, stemming from fears of rejection or abandonment: *"I struggled to communicate effectively with my partners about my thoughts, feelings, and concerns. I lacked the courage to initiate these conversations, fearing rejection or conflict."* These apprehensions often created barriers to emotional connection, requiring survivors to navigate vulnerability cautiously.

For some participants, eventually disclosing their CSA experiences proved transformative. MA shared how this openness fostered trust and understanding: *"I was transparent with my partner about my past experiences and the trauma I've endured. This level of openness allowed me to establish a foundation of trust and understanding from the beginning."* Establishing clear expectations and boundaries also emerged as a key strategy for maintaining healthy relationships. PJ highlighted, *"I communicate with my partner by setting clear expectations and boundaries... I openly discuss possible triggers for disagreements and fights. I vocalize treatments I won't tolerate and express what makes me*

happy.” By adopting proactive communication practices, survivors cultivated a safe and supportive relational environment.

Research by Fuller Thomas et al. (2019) supports these accounts, emphasizing the importance of communication for emotional health in relationships involving trauma survivors. Their work indicates that selective disclosure strategies help survivors manage the delicate balance between openness and self-protection. Furthermore, it establishes that when survivors disclose their trauma in a supportive context, relational satisfaction and emotional intimacy can increase. Fuller Thomas et al. also found that establishing clear boundaries and open communication is essential for trauma survivors, as these strategies create safety and predictability in relationships – fundamental for trauma recovery.

3.7 Theme G: Effective Communication and Emotional Connection Within The Relationship

For individuals with childhood trauma, Effective Communication and Emotional Connection emerged as crucial in building strong romantic relationships. Participants described strategies that fostered closeness, including consistent verbal affirmations of affection, acts of service, and fostering openness. KM emphasized daily expressions of love, noting, *“Every day I always say, ‘I love you.’ Parang walang lumipas ‘yung araw na hindi ko sinabi sakaniya ‘yun... That is how I nurture our relationship.”* Others highlighted thoughtful actions that demonstrated care, such as MG’s account of providing financial and emotional support during her partner’s challenges: *“I saved him from distress ng financial incapacity niya... making participants feel seen and valued.”* Open and honest dialogue also played a pivotal role, with MA sharing, *“Continuously being open and honest with my partner creates an atmosphere of trust and authenticity... Empathizing with my partner’s experiences strengthens our bond and emotional connection.”* Participants underscored the value of empathizing with their partner’s perspectives, as PM explained: *“Since we both work in the same industry, I understand the challenges we face... allowing me to empathize with him and offer support.”* Finally, engaging in shared activities, such as PJ’s effort to participate in her partner’s interests, further enriched their connections: *“Going out of my way to become better at these games... creates opportunities for us to bond and have fun together.”*

Research on relationship dynamics by Westerman et al. (2020) supports these findings, highlighting how acts of service and shared activities reinforce emotional bonds. Studies show that openly discussing feelings and empathizing with a partner’s perspective is linked to increased intimacy and relational resilience. These underscore the broader relevance of the participants’ strategies in promoting strong, supportive romantic relationships, illustrating how emotional connection can be enhanced through intentional communication and thoughtful gestures.

3.8 Theme H: Emotional Regulation and Effective Communication within Relationships

Navigating stress and conflicts in romantic relationships necessitates a blend of Emotional Regulation and Effective Communication strategies. Participants described employing methods like maintaining composure during disagreements, channeling stress into productive activities, and fostering open dialogue to address issues constructively. KM illustrated the value of self-regulation, sharing, *“Kapag medyo emotional ako... iniintay ko lang muna na, bumaba ‘yung emotions ko at kapag kaya ko na siyang kausap nang hindi ako nadadala ng emotions ko, that’s the time na kakausapin ko siya.”* This approach reduced impulsive reactions and promoted thoughtful discussions. Others, like MG, described sublimating stress through physical or household tasks, saying, *“Tumataas ‘yung adrenaline ko sa trabaho, gumawa ng gawaing bahay. Ayun na ‘yung projection ko nung stress.”* Open communication emerged as a cornerstone of conflict resolution. MA emphasized, *“Confronting difficult situations through open communication demonstrates a willingness to address issues head-on and work through challenges together.”* Participants also highlighted the importance of clearly expressing thoughts and feelings without assigning blame, as PJ shared: *“I directly express my thoughts and feelings... avoid blaming my partner, stick to one argument at a time, and do not sweat the small stuff.”* These strategies fostered mutual respect, empathy, and collaborative problem-solving, reinforcing trust and emotional safety.

Research supports the findings related to childhood sexual abuse (CSA) and its effects on emotional regulation and communication in adult relationships. CSA survivors often face challenges in managing emotions and maintaining open communication due to deep-seated trauma and trust issues stemming from their past experiences (McTavish et al., 2019). Johnson et al. (2019) further emphasized that self-composure and emotional

regulation are crucial for CSA survivors, as these skills help mitigate intense emotional responses triggered by relational stress.

3.9 Theme I: Constructive Relational Dynamics

In exploring the positive aspects and personal growth within romantic relationships, the theme of Constructive Relational Dynamics emerged as pivotal, particularly for survivors of childhood sexual abuse (CSA). Participants emphasized respecting boundaries as essential for trust and safety, with KM reflecting, *"Respect your partner in all aspects... Not just physically, sa lahat ng aspeto."* Emotional support and companionship were also highlighted, as MG shared, *"Yung comfort lang ng asawa ko 'yung nagiging sandalan ko, itself. Pero siguro kung ako lang mag-isa, hindi ko talaga kaya."* Open communication was consistently valued for resolving conflicts and fostering mutual understanding, with MA stating, *"Confronting difficult situations through open communication demonstrates a willingness to address issues head-on."* Participants also found that honest dialogue encouraged self-reflection and growth, as PM described: *"Addressing these communication challenges has been instrumental in building a healthier version of myself."* Observing partners' strategies provided additional learning opportunities, with PJ noting, *"I have learned new approaches and strategies for managing difficult situations."* These relational dynamics cultivated emotional safety, resilience, and mutual growth.

Research supports these findings, indicating that respecting boundaries is crucial for maintaining trust and preventing conflicts, particularly in relationships involving individuals with past trauma (Baumann et al., 2020). The presence of companionship and emotional support during challenging times significantly enhances relationship satisfaction and stability. Furthermore, Vaillancourt-Morel et al. (2023) underscore that open communication is essential for conflict resolution, ensuring both partners feel understood and valued. This aligns with their study's findings that transparent and honest dialogues enhance relational quality and facilitate collaborative problem-solving. Additionally, self-reflection and self-improvement are vital for fostering personal growth and a deeper understanding of emotional needs, which are critical for sustaining healthy relationships.

3.10 Theme J: Setting of Boundaries, Strength, and Resilience

The theme of Setting Boundaries, Strength, and Resilience encapsulates how survivors of childhood sexual abuse (CSA) manage challenges and foster growth within adult romantic relationships, reflecting their journey toward self-protection and empowerment. Participants emphasized the importance of setting boundaries to safeguard emotional well-being and asserting control, with KM expressing, *"naging tough ako or parang naging strength ko siya... that I should never allow this again to happen without my permission or my consent."* Survivors establish a sense of safety and autonomy by defining personal limits, fostering more predictable and supportive relational dynamics. Strength and resilience were also central, as participants described how their experiences, though painful, cultivated profound inner resolve. MA shared, *"By drawing on bravery, hopefulness, empathy, and resourcefulness, I continue to overcome challenges and build fulfilling and meaningful connections with others."* This resilience developed through adversity, equips survivors with tools to navigate relational challenges and foster emotional intimacy.

The literature supports the importance of setting boundaries, especially for survivors of childhood sexual abuse. Establishing boundaries is a critical aspect of self-care and emotional regulation, enabling individuals to protect themselves from further harm and maintain mental health. Research indicates that survivors who establish clear boundaries navigate relationships more effectively, reducing feelings of overwhelm or re-traumatization (Fletcher et al., 2021). Moreover, as suggested by Guggisberg et al. (2021), strength and resilience are attributes that CSA survivors often develop. These qualities signify a remarkable capacity for endurance and adaptability, essential for overcoming the long-term impacts of trauma and fostering healthy, supportive relationships. Resilience is a dynamic process involving positive adaptation in adversity, which is critical for sustaining romantic relationships. Additionally, resilience can be cultivated through supportive relationships, self-reflection, and therapeutic interventions, highlighting the potential for growth and healing even after significant trauma.

4.0 Conclusions

This study provides significant insights into the lived experiences of adult survivors of childhood sexual abuse (CSA) and their navigation of romantic relationships. Through qualitative analysis, ten themes emerged, capturing the complexities of trust, intimacy, communication, and resilience within these relationships. Survivors

highlighted the importance of holistic bonding practices, emotional regulation, and effective communication in fostering meaningful connections. While past trauma introduced challenges such as trust issues and intimacy barriers, participants demonstrated remarkable resilience, employing strategies like setting boundaries and cultivating emotional regulation to build stronger relationships and achieve personal growth. These findings underscore the dual realities of the enduring impacts of CSA and the transformative potential of healing and empowerment.

This study is firmly grounded in Adult Attachment Theory, which underscores early relational experiences' influence on adult relationships' dynamics. The theory posits that secure attachment facilitates the development of healthy emotional bonds, whereas insecure attachment is associated with significant challenges in establishing trust, fostering intimacy, and regulating emotions. Survivors of CSA, as evidenced by this study, often struggle with attachment-related challenges, such as emotional guardedness and trust issues, stemming from early trauma. However, the findings suggest that through therapeutic interventions, boundary-setting, and emotional self-regulation, these individuals can experience a shift toward more secure attachment behaviors. Participants demonstrated a growing capacity for resilience, crucial in moving from insecure to secure attachment patterns, allowing them to navigate relationships more effectively and foster emotional closeness with partners.

The study highlights several contributions. It reinforces the critical role of trauma-informed approaches in addressing the unique needs of CSA survivors. Findings emphasize the necessity of safe spaces for survivors to explore trust, intimacy, and emotional connection, offering practical recommendations for therapeutic and relational interventions. The themes also underline the importance of educating partners about trauma-informed support techniques, enhancing mutual understanding and relational satisfaction. This aligns with attachment theory's assertion that secure relationships require both individuals to be attuned to each other's emotional needs and respond with empathy and support.

To advance this field, the study recommends future efforts to expand access to trauma-informed therapy and support groups, develop culturally sensitive interventions, and advocate for policy changes to protect survivors and extend legal remedies. Establishing peer networks and launching public education campaigns are also essential to destigmatize CSA and promote supportive environments for survivors. Longitudinal research exploring the intersectional experiences of CSA survivors is encouraged, aiming to inform comprehensive and inclusive practices for fostering resilience and relational well-being. By integrating these strategies, society can better support CSA survivors on their journey toward healing and fulfilling romantic relationships, facilitating their development of more secure attachment patterns and ultimately improving relational outcomes.

5.0 Contributions of Author

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7.0 Conflict of Interest

The author declares no conflicts of interest about the publication of this paper.

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Spending Behavior of Public School Teachers: Implementation of Financial Wellness Program

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Abstract. This descriptive study assessed the spending behavior of public school teachers in District II, Quezon City, alongside their socio-economic profiles and the potential benefits of a financial wellness program. The study involved 298 secondary public school teachers, selected using stratified random sampling to ensure proportional representation across district schools. The selection process accounted for school size and the number of teachers per school relative to the total district population. Data was collected through a structured survey to capture detailed socioeconomic information and spending behaviors. The findings revealed that most respondents had 1 to 2 dependents, full-time employed spouses, and a gross monthly income of 20,000–40,000 pesos. A majority relied solely on their teaching income without additional sources. Significant differences were observed between socio-economic profiles and spending behaviors. Key contributing factors included regular saving patterns, debt management, financial decisions, and financial planning. The study recommends implementing financial education programs focusing on budgeting, saving, debt management, retirement planning, and investment to address these issues. Promoting peer support networks and responsible financial products is also essential to enhance financial wellness.

Keywords: Financial literacy; Financial wellness program; Perceived behavioral control; Spending behavior; Subjective norms

1.0 Introduction

Public school teachers in the Philippines play a critical role in shaping the nation's future, yet they face significant financial challenges that impact their well-being and spending behavior. A Bangko Sentral ng Pilipinas (BSP) study found that only 41% of Filipinos can correctly answer one out of three financial literacy questions, with just 8% answering all three. This highlights a broader issue of financial vulnerability, particularly among teachers. Spending behavior reflects how individuals allocate their income, influenced by financial literacy, socio-economic status, and external economic factors. While research has emphasized the link between spending behavior and financial well-being, the unique financial struggles of teachers remain underexplored.

Despite the Department of Education's initiatives to integrate financial literacy into the school curriculum, many teachers experience financial instability. According to the 2021 Family Income and Expenditure Survey, 25.4% of public school teachers live below the poverty line. Low wages, rising living costs, and inflation exacerbate their financial struggles. Consequently, many teachers resort to debt and risky financial practices to meet daily expenses. This financial instability impacts their productivity and well-being and, in severe cases, drives educators to leave the profession or seek opportunities abroad, with data from the Philippine Overseas Employment

Administration (POEA) showing that 1,500 teachers left the Philippines from 2013 to 2017. These issues highlight the urgent need for financial wellness programs tailored to teachers' specific needs. This study aims to address this gap by assessing the spending behavior of public school teachers in District II, Quezon City, and their socio-economic profiles. It also seeks to evaluate the potential of financial wellness programs in mitigating financial challenges and promoting sustainable financial practices.

2.0 Methodology

2.1 Research Design

This study employed a descriptive research method to investigate the respondents' socio-economic profile and spending behaviors. Descriptive research allowed for systematic data collection, surveying, and interpretation of the socio-economic conditions that could influence spending patterns. The study used quantitative research techniques to systematically gather numerical data to describe variables and examine relationships between socioeconomic factors and spending behavior. This methodology provided valuable insights into the factors at play and tested the hypothesis effectively.

2.2 Research Participants

The study was conducted in District II, Quezon City: Bagong Silangan High School, Commonwealth High School, Holy Spirit National High School, Judge Feliciano Belmonte Sr. High School, and Justice Cecilia Munoz Palma High School. The selection of the five schools was based on several key criteria, including their socio-economic diversity, representation of different educational systems, and the willingness of the schools to participate in the study. Schools were chosen to provide a comprehensive perspective on socioeconomic factors influencing spending behavior. Geographic distribution was also considered to ensure the sample reflected various regional contexts, contributing to a more holistic view of the research subject. The total number of teachers was 1,312, and Cochran's formula determined a sample size of 298 respondents. Stratified random sampling ensured adequate representation from each school.

2.3 Research Instrument

The main data collection instrument was a questionnaire, which included socio-economic profiles (number of dependents, spouse employment, gross monthly income, other income sources, and financial instruments) and spending behavior (financial attitudes, subjective norms, perceived behavioral control, and financial literacy). The tool used for data collection in this study was adapted from existing instruments with modifications to better align with research objectives. The variables used were derived from studies by Perculeza et al. (2016) and De Jesus & De Jesus (2021), with modifications based on Ferrer (2017). A 5-point Likert scale was employed, and the questionnaire underwent validation and pilot testing. The tool's reliability was confirmed, with Cronbach's Alpha values ranging from 0.776 to 0.818 for the different variables. These modifications ensured that the data collected would directly address the research hypothesis and answer the research question.

2.4 Data Gathering Procedure

The researcher obtained permission from school authorities and collected data using Google Forms. Data were analyzed using Frequency and Percentage Distribution for socio-economic profiles and Weighted Mean for spending behavior. The Kruskal-Wallis H-Test assessed significant differences in spending behavior and socio-economic profiles among the respondents, helping determine if there were significant differences in the medians of three or more independent groups.

2.5 Ethical Considerations

This research study passed the evaluation of the university ethics committee according to the requirements set by the Philippine Health Research Ethics Board (PHREB). The research was conducted strictly according to the submitted and approved protocol and other documentary requirements.

3.0 Results and Discussion

3.1 Socio-Economic Profile of the Respondents

Table 1 reveals that most respondents have 1 to 2 dependents (39.3%), followed closely by those with 3 to 5 (36.3%). A smaller percentage have 5 to 6 dependents (12.8%), no dependents (6.7%), or more than six dependents (4.7%). This data agrees with the study of Kiran and Dhawan (2015), which claimed that teachers with fewer dependents

might have greater flexibility in budgeting and financial planning, enabling them to allocate resources more freely towards savings and investments. Conversely, those supporting larger families face heightened financial pressures, requiring meticulous budgeting to sustain household needs (Mayrhofer et al., 2008). This disparity influences spending habits and impacts job satisfaction and stress levels, potentially affecting overall well-being and work-life balance.

Table 1. *Number of dependents*

No. of Dependents	Frequency	Percentage (%)
None	20	6.70
1 to 2	117	39.3
3 to 5	109	36.6
5 to 6	38	12.8
more than 6	14	4.70

Regarding spouse employment presented in Table 2, the highest number of respondents (50.3%) have a spouse employed full-time, indicating prevalent dual-income households, which typically enjoy more stable financial foundations and greater flexibility in financial planning and savings. Additionally, 26.2% of respondents are single, 15.1% have a self-employed spouse, 5.7% have a spouse employed part-time, 1.7% have a spouse working abroad, and 1% have an unemployed spouse. Households with unemployed spouses often face heightened financial constraints and stress, struggling to maintain financial security and meet long-term financial goals such as savings for retirement or children's education. The employment status of a spouse also influences career decisions and work-life balance, shaping teachers' professional trajectories and personal well-being.

Table 2. *Spouse employment*

Employment Type	Frequency	Percentage (%)
Full-time employed	150	50.3
Self-employed	45	15.1
Not Applicable/ Single	78	26.2
Part-time employed	17	5.7
OFW	5	1.7
Unemployed	3	1

The gross monthly income data in Table 3 shows that most respondents (62.4%) earn between 20,001 and 40,000, indicating a trend toward moderate income levels that necessitate careful financial management. Those earning between 40,001 and 60,000 (17.8%) enjoy more flexibility in spending and saving, potentially directing surplus income towards discretionary expenses or future investments. Conversely, respondents earning 20,000 or below (12.4%) face greater financial constraints, leading to challenges in meeting basic needs and limited capacity for savings. A smaller segment earns between 60,001 and 90,000 (1.3%) or 90,000 and above (6%), highlighting a subset with more resources for savings and investments and unique challenges in managing larger incomes effectively. These income disparities underscore the importance of targeted financial education and support programs tailored to different income brackets within the teaching profession, aiming to enhance overall financial well-being and stability.

Table 3. *Gross monthly income*

Gross Monthly Income	Frequency	Percentage (%)
20,000 and below	37	12.4
20,001 - 40,000	186	62.4
40,001 - 60,000	53	17.8
60,001 -90,000	4	1.3
90,000 and above	18	6

3.2 Respondent's Spending Behavior

Table 4 indicates that respondents generally possess a positive financial attitude, evidenced by a composite mean score of 4.24. Notably, the highest mean score of 4.39 indicates agreement with establishing a regular saving pattern, whether weekly or monthly, to enhance financial stability and achieve financial objectives.

Table 4. *Respondent's assessment of the spending behavior in terms of financial attitude*

Indicators	Mean	Interpretation
1. I am satisfied with the financial instruments (credit cards, debit cards, e-wallets, etc.) I currently have, as they provide exceptional convenience and effectively meet my financial needs.	3.97	Agree
2. I am enthusiastic about acquiring additional financial instruments to meet my financial needs and cover other expenses effectively.	4.15	Agree
3. Using financial instruments responsibly can be a powerful tool for achieving financial goals while minimizing debt.	4.34	Agree
4. Using financial instruments effectively can help manage expenses and avoid unnecessary debt.	4.22	Agree
5. having financial instruments makes it easy for me to borrow money.	4.26	Agree
6. I consistently practice maintaining an adequate emergency fund to handle unexpected expenses such as medical bills, repairs, or job loss.	4.27	Agree
7. I believe in developing a regular pattern of saving, whether weekly or monthly, to build financial stability and reach financial goals.	4.39	Agree
8. I can overcome debt challenges and achieve my financial goals with careful planning and responsible management.	4.29	Agree
Overall Weighted Mean	4.24	Agree

This finding aligns with previous studies emphasizing the critical role of regular savings in financial well-being. For instance, Lusardi and Mitchell (2014) highlight that consistent savings habits significantly contribute to long-term financial security and the ability to manage unexpected expenses, thereby promoting financial stability and resilience. However, satisfaction with the financial instruments available to respondents, such as credit cards, debit cards, and e-wallets, received the lowest mean value of 3.97. This suggests that more than the financial attitude among teachers towards these instruments may be required to provide exceptional convenience and effectively meet their financial needs. Based on the findings of Zhou et al. (2009), implementing tailored educational programs and workshops can significantly improve teachers' financial literacy. These programs should focus on understanding basic financial concepts like budgeting, saving, investing, and debt management. Workshops can also include practical sessions on using different financial instruments like credit cards, debit cards, and e-wallets, addressing specific concerns identified by Chin and Ahmad (2015). Addressing these issues makes it possible to foster greater satisfaction with financial instruments and further support the positive financial attitudes observed among the respondents.

Table 5 reveals that respondents agree on the factors related to subjective norms, with a composite mean score of 4.02. The most significant factor, with a mean score of 4.44, is the importance of paying off debt to avoid high interest rates. This practice promotes long-term financial stability and reduces financial stress among educators, emphasizing the supportive role of family dynamics in reinforcing positive financial behaviors. Families' belief in investing for the future, whether through loans for a house or car, received a mean score of 4.14, while support from colleagues and peers in financial endeavors scored 4.06. The lowest mean score of 3.84 was related to peer support using digital financial tools like credit cards and e-wallets for travel and social expenses. This indicates concerns about these digital tools' security, convenience, and acceptance.

Table 5. *Respondent's assessment of the spending behavior in terms of subjective norms*

Indicators	Mean	Interpretation
1. With my current financial status, I can pay and support my dependents' living expenses and basic needs, such as food, gas, and hygiene supplies.	3.90	Agree
2. I believe in supporting my loved ones through financial assistance, offering my credit cards or e-wallets to ease their burdens when purchasing essential items like groceries or medical bills.	3.88	Agree
3. I appreciate the support of my friends, peers, and colleagues in helping me use convenient financial tools like credit cards, debit cards, and e-wallets to manage travel costs and social expenses efficiently.	3.84	Agree
4. I am grateful for the support of my colleagues and peers willing to assist me financially.	4.06	Agree
5. I believe in my financial capacity and am committed to using debt responsibly to build a secure and prosperous future.	3.95	Agree
6. working together to pay off debt is a great way to strengthen family bonds and communication.	3.98	Agree
7. My family believes paying off debt is vital to avoid high interest rates.	4.44	Agree
8. My family believes in investing for the future, whether through a house or car loan, to build a better tomorrow.	4.14	Agree
Overall Weighted Mean	4.02	Agree

One noteworthy challenge related to spending behavior in terms of subjective norms is the pressure to conform to societal expectations, which can lead to financial stress and unsustainable financial practices. This involves social pressure to perform or not perform a particular behavior, influenced by the views and actions of significant

others such as family, friends, and society. Social pressures play a crucial role in shaping teachers' financial behaviors, influencing positive actions like saving and repaying debts and potentially negative outcomes when expectations become unrealistic. Research, such as that by Satsios and Hadjidakis (2018), highlights how excessive pressure to conform can lead to stress and unsustainable financial choices. This is also supported by studies such as Lusardi and Tufano (2015), which highlight the importance of financial literacy in debt management and its impact on financial well-being. Effective debt management strategies are crucial to avoid the long-term financial burden of high-interest debt, as indicated by the respondents' high mean score. To address this, creating a supportive school community that encourages realistic financial goals, provides comprehensive financial education, and fosters peer support networks is vital.

Table 6 shows that respondents' evaluations of spending behavior regarding perceived behavioral control fall within the range of agreement, with the highest mean score of 4.47 for considering affordability before purchasing. Allocating specific percentages of income to savings, expenses, and investments received a mean score of 4.13. Maintaining complete control over finances and striving to be debt-free scored 4.09. The lowest mean scores were for confidence in handling unexpected expenses (3.83) and setting aside funds for well-being (3.82). Perceived behavioral control is a key predictor of actual behavior, indicating strong financial discipline among respondents. Managing finances effectively requires confidence, which can be bolstered by increasing financial knowledge and addressing past negative experiences. A deliberate approach to spending, debt management, and maximizing asset value is essential for achieving financial security and independence, especially for those with dependents.

Table 6. *Respondent's assessment of the spending behavior in terms of perceived behavioral control*

Indicators	Mean	Interpretation
1. I have complete control over my finances.	4.09	Agree
2. I know that before buying something, I must consider whether I can afford it.	4.47	Agree
3. I consciously set aside funds to enhance my well-being, including treating myself to restaurant experiences, acquiring jewelry, and enjoying occasional indulgences.	3.82	Agree
4. I allocate specific percentages of my income to savings, expenses, and investments.	4.13	Agree
5. I am committed to being debt-free while maximizing the value of my assets, including possessions, investments, and savings, to enhance my financial security and independence.	4.09	Agree
6. I am confident handling unexpected expenses in the following months, knowing I have a well-funded emergency fund.	3.83	Agree
7. While having dependents makes saving a challenge, I am committed to finding creative solutions to build a solid financial safety net for my family.	4.05	Agree
8. While my family has not had a savings practice, I am excited to start and break that cycle. I am committed to building a safety net for myself and my future.	4.05	Agree
Overall Weighted Mean	4.07	Agree

Studies indicate that higher perceived control over finances correlates with lower debt levels and greater financial satisfaction (Shim et al., 2010). Additionally, maximizing asset value for financial security aligns with research emphasizing asset management as crucial for financial independence (Friedline & West, 2016). The challenges of saving when having dependents, coupled with a strong commitment to finding creative financial solutions. This finding suggests that financial responsibilities increase with dependents, motivating individuals to build a financial safety net. Research supports this, showing that individuals with dependents are more driven to save due to their heightened sense of responsibility (Grinstein-Weiss et al., 2015).

Table 7 presents respondents' evaluations of spending behavior regarding financial literacy, with an average score of 4.07. The highest scores were for understanding the importance of planning to spend (4.41) and legally declaring all assets (4.26). Identifying short and long-term financial goals and recognizing the distinctions between various financial products scored 4.18 and 4.16, respectively. Preparing a written budget and planning for sufficient retirement income scored 3.98 and 3.95, respectively, while understanding necessary insurance products scored 3.94. The lowest score of 3.79 was for setting aside savings for anticipated expenses without relying on bank loans or debt. Financial literacy is crucial for making informed financial decisions, and deficiencies in this area can lead to poor spending habits, high-interest debt, and ineffective saving. The findings align with studies highlighting the importance of financial planning skills and asset declaration in achieving financial security and stability. Comprehensive financial literacy programs are necessary to address gaps and improve financial behavior.

Table 7. *Respondent's assessment of the spending behavior in terms of financial literacy*

Indicators	Mean	Interpretation
1. I know the difference between a pension fund, an investment account, an insurance policy, and a credit card.	4.16	Agree
2. I know about the interest rates charged by banks and the borrowing rates charged by financial institutions.	4.14	Agree
3. I know what financial goals I want to achieve in the short and long term.	4.18	Agree
4. I prepare a written budget or list in advance that distributes savings, expenses, emergency funds, and so on.	3.98	Agree
5. I allot savings for expected expenses like purchasing new gadgets, jewelry, house renovations, etc., and do not depend on bank loans or debt for fund resourcing.	3.79	Agree
6. I know that planning for spending money is essential for successful financial management.	4.41	Agree
7. I legally declare all of my assets to protect them financially.	4.26	Agree
8. I secure adequate protection or insurance for myself, my family, and my assets.	3.90	Agree
9. I know what insurance products I need to achieve my goals at my current age, such as health insurance, life insurance, and Valuable Universal Life Insurance.	3.94	Agree
10. I have made plans for an adequate retirement income.	3.95	Agree
Overall Weighted Mean	4.07	Agree

The gathered data supports the studies of Lusardi and Mitchell (2014), which found that individuals with better financial planning skills are more likely to manage their finances effectively, leading to greater financial security and stability. Also, studies by (Campbell et al., 2011) demonstrate that clear asset declaration aids in better financial planning and protection, reducing risks associated with undeclared or mismanaged assets. Huston (2010) revealed in his study that financial literacy, including knowledge of financial products, is critical for making informed decisions, helping individuals choose the right products for their needs, and leading to better financial health. These findings are consistent with existing literature, reinforcing the importance of comprehensive financial literacy programs to address gaps and improve overall financial behavior.

3.3 Difference of Spending Behavior across Teachers' Socio-Economic Profiles

Table 8 uses the Kruskal-Wallis H-Test to examine spending behavior among teacher-respondents, grouped by the number of dependents.

Table 8. *Kruskal-Wallis H-Test: Comparison of the respondent's assessment of the spending behavior when according to the number of dependents*

Spending Behavior	No. of Dependents	Mean Rank	Kruskal-Wallis H	p-value	Decision	Remark
Financial Attitude	None	185.48	12.903	0.012	Reject Ho	Significant
	1 to 2	139.86				
	3 to 5	156.22				
	5 to 6	159.37				
	more than 6	99.50				
Subjective Norms	None	220.60	27.964	0.000	Reject Ho	Significant
	1 to 2	152.74				
	3 to 5	130.02				
	5 to 6	164.63				
	more than 6	131.50				
Perceived Behavioral Control	None	222.20	26.229	0.000	Reject Ho	Significant
	1 to 2	153.36				
	3 to 5	141.24				
	5 to 6	128.34				
	more than 6	135.11				
Financial Literacy	None	211.43	16.036	0.003	Reject Ho	Significant
	1 to 2	141.68				
	3 to 5	147.67				
	5 to 6	152.46				
	more than 6	132.57				

The analysis reveals significant differences in various financial aspects, highlighting how familial responsibilities influence financial attitudes and behaviors. Teachers with more dependents tend to adopt more conservative financial attitudes due to increased financial responsibilities ($H = 12.903$, $p = 0.012$), aligning with the findings of Lyons & Neelakantan (2008). Subjective norms regarding financial behavior also vary significantly with the number of dependents ($H = 27.964$, $p = 0.000$), suggesting stronger social pressures for prudent financial management among those with larger families, in line with Ajzen's Theory of Planned Behavior (1991).

Additionally, the number of dependents significantly affects teachers' confidence in managing finances ($H = 26.229$, $p = 0.000$) and financial knowledge ($H = 16.036$, $p = 0.003$). These results indicate that teachers with more dependents adopt a cautious financial approach, prioritizing stability and managing tighter budgets due to increased expenditures on essentials such as housing, education, and healthcare. This cautious approach includes creating emergency funds and careful budgeting to meet family needs while planning for long-term goals like children's education and secure retirement. The study underscores the importance of community support, institutional benefits, and tailored financial strategies in reducing financial stress and promoting overall well-being among teachers with dependents. Educational institutions should consider support structures, such as financial advisory services and emergency aid programs, to help teachers manage their financial responsibilities effectively.

Table 9's Kruskal-Wallis H-Test, conducted at a significance level of 0.05, reveals significant differences across all spending variables based on respondents' spouse employment status.

Table 9. *Kruskal-Wallis H-Test: Comparison of the respondent's assessment of the spending behavior when grouped according to spouse employment*

Spending Behavior	Spouse Employment	Mean Rank	Kruskal-Wallis H	p-value	Decision	Remark
Financial Attitude	Full-time employed	149.47	26.413	0.000	Reject H_0	Significant
	Self-employed	105.59				
	Not Applicable/ Single	170.21				
	Part-time employed	191.03				
	OFW	100.80				
	Unemployed	117.17				
Subjective Norms	Full-time employed	144.56	13.016	0.023	Reject H_0	Significant
	Self-employed	132.77				
	Not Applicable/ Single	173.79				
	Part-time employed	140.38				
	OFW	107.10				
	Unemployed	138.50				
Perceived Behavioral Control	Full-time employed	138.94	28.536	0.000	Reject H_0	Significant
	Self-employed	129.54				
	Not Applicable/ Single	181.96				
	Part-time employed	125.00				
	OFW	181.00				
	Unemployed	219.33				
Financial Literacy	Full-time employed	148.17	11.193	0.048	Reject H_0	Significant
	Self-employed	124.88				
	Not Applicable/ Single	169.58				
	Part-time employed	139.09				
	OFW	142.40				
	Unemployed	134.17				

These differences highlight the profound impact of spouse employment on financial attitudes, subjective norms, perceived behavioral control, and financial literacy. The significant difference in financial attitudes ($H = 26.413$, $p = 0.000$) suggests that employed spouses reduce financial strain and increase financial stability, leading to more positive financial attitudes. For subjective norms ($H = 13.016$, $p = 0.023$), spouse employment status affects perceived social pressures to engage in certain financial behaviors, aligning with findings by Magli et al. (2021). Significant differences in perceived behavioral control ($H = 28.536$, $p = 0.000$) highlight how spouse employment shapes confidence in financial management, as noted by Perry and Morris (2005). Differences in financial literacy ($H = 11.193$, $p = 0.048$) suggest that employed spouses have better access to financial information, improving household financial literacy, as argued by Lusardi and Mitchell (2014). These findings reveal a complex interplay between income, financial roles within the household, and broader socio-economic factors affecting financial decisions and well-being. The employment status of a spouse contributes to shared financial responsibilities and support, influencing overall financial behaviors and attitudes.

Table 10's Kruskal-Wallis H-Test reveals significant differences in financial attitudes ($H = 26.155$, $p = 0.000$), subjective norms ($H = 13.069$, $p = 0.011$), perceived behavioral control ($H = 25.764$, $p = 0.000$), and financial literacy ($H = 11.218$, $p = 0.024$) among respondents categorized by gross monthly income.

Table 10. *Kruskal-Wallis H-Test: Comparison of the respondent's assessment of the spending behavior when grouped according to gross monthly income*

Spending Behavior	Gross Monthly Income	Mean Rank	Kruskal-Wallis H	p-value	Decision	Remark
Financial Attitude	Full-time employed	147.64	26.155	0.000	Reject Ho	Significant
	Self-employed	104.03				
	Not Applicable/ Single	168.25				
	Part-time employed	189.00				
	OFW	99.30				
Subjective Norms	Full-time employed	142.99	13.069	0.011	Reject Ho	Significant
	Self-employed	131.26				
	Not Applicable/ Single	171.99				
	Part-time employed	138.85				
	OFW	105.90				
Perceived Behavioral Control	Full-time employed	138.26	25.764	0.000	Reject Ho	Significant
	Self-employed	128.94				
	Not Applicable/ Single	180.81				
	Part-time employed	124.50				
	OFW	179.90				
Financial Literacy	Full-time employed	146.49	11.218	0.024	Reject Ho	Significant
	Self-employed	123.40				
	Not Applicable/ Single	167.85				
	Part-time employed	137.47				
	OFW	140.80				

These findings indicate substantial variability in financial behaviors, leading to rejecting the null hypothesis. The variation in financial attitudes underscores their crucial role in shaping financial behaviors, resonating with Richardson et al. (2017), who emphasized their stability and influence on financial well-being. The variation in subjective norms aligns with Lim et al. (2020), highlighting the role of social influences in financial decision-making. Differences in perceived behavioral control reflect Hagger et al. (2022), suggesting that confidence in financial management varies with income. Lastly, the variation in financial literacy underscores the need for enhanced financial education, consistent with Cwynar (2020), emphasizing its importance in mitigating risks and promoting well-being. These results highlight the importance of considering income levels in financial education and planning strategies. Enhanced financial literacy programs are necessary to address gaps and improve financial behavior across different income groups.

4.0 Conclusion

The study examined the socio-economic status of junior high school teachers in District II – Quezon City, revealing key insights into their financial situation. A significant proportion of teachers, typically with 1 to 2 dependents, are the primary financial providers for their families. Teachers generally earn a gross monthly income of 20,001 to 40,000 pesos, including supplementary earnings. While most teachers rely on their public school teaching positions for their main income, many also engage in additional ventures, such as running businesses, tutoring, or online selling. This supplementary income reflects the need to supplement their salaries to meet household expenses. The study also found that teachers often prefer E-wallets or phone payment accounts, indicating a trend toward digital financial tools for managing their finances. Despite the societal prestige of teaching, many teachers face financial pressures due to their relatively low salaries. The reliance on supplementary income underscores the gap between teachers' salaries and the cost of living, suggesting that a teacher's salary alone is insufficient to cover family expenses.

The findings revealed that while teachers show a strong commitment to savings and responsible financial management, there are gaps in their financial behaviors and attitudes that could be addressed to improve their financial stability. Despite general satisfaction with their saving and debt repayment approach, dissatisfaction with financial tools like credit cards and e-wallets highlights the need for more convenient and effective financial instruments. Social influences, particularly family support, strongly shape their financial decisions. However, there is less consensus among peers regarding using financial tools for managing everyday expenses, pointing to an opportunity for more peer-driven financial strategies. While teachers demonstrate solid financial literacy in financial planning and asset protection, they face challenges in long-term financial planning, budgeting, and saving for anticipated expenses without relying on debt. These findings suggest a need for targeted financial education programs that enhance teachers' ability to manage their finances effectively, build resilience against

financial uncertainties, and improve long-term financial security, ultimately contributing to their overall well-being.

Overall, the findings highlight the significant impact of personal and household factors on the financial behaviors and attitudes of teachers. The number of dependents emerged as a key factor influencing financial attitudes, subjective norms, perceived behavioral control, and financial literacy. Teachers with more dependents likely face greater financial pressures, which could influence their spending habits, financial decision-making, and strategies for managing finances. This suggests that teachers with larger families may have to adopt more stringent financial practices, potentially prioritizing savings and debt management more than those with fewer dependents. Similarly, the employment status of respondents' spouses also plays a crucial role in shaping their financial behaviors. Teachers whose spouses are employed exhibit differences in financial attitudes, norms, control, and literacy, indicating that dual-income households may experience more financial stability and flexibility, influencing their approach to financial planning and decision-making. Lastly, gross monthly income, including spouse income, was found to significantly affect financial attitudes and behaviors. Higher income levels correlate with greater perceived control over finances and improved financial literacy, suggesting that teachers with higher or combined incomes may have more resources and opportunities to make informed financial decisions. These findings emphasize the need for financial education and support tailored to teachers' family structures and income levels to enhance their financial security and well-being.

5.0 Contributions of Authors

This research was conducted solely by the author under the guidance of a university adviser. The author independently carried out the conception, design, analysis, writing, and revision of the manuscript.

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Linking Family Dynamics, Social Media Use, and Maladaptive Coping in Emerging Adults: A University-Based Correlational Study

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Abstract. Emerging adults are expected to contend with numerous stressors brought about by the transition from adolescence to full-fledged adulthood. This predisposes them to resort to several coping mechanisms, which is influenced by their family dynamics and social media use (SMU). This study investigated the relationship between emerging adults' general family functioning, social media use, and maladaptive coping. This study utilized a cross-sectional design that collected data from 725 emerging adults aged 18-25 years old from a university in Quezon City, Philippines. The participants answered a questionnaire integrating the Family Functioning Device, Self-Report Measures Assessing SMU, and the BRIEF-COPE. The relationships between the variables were assessed by conducting correlational and regression analyses. The results of this study showed that there was no significant correlation between family functioning and SMU ($p = 0.775$). Alternatively, lower levels of general family functioning is significantly correlated with higher levels of maladaptive coping behaviors ($p < 0.049$). Increased SMU was also associated with maladaptive coping ($p < 0.000$). The regression analysis revealed that both SMU ($b = 0.1205$, $p < .001$) and family functioning ($b = 0.0505$, $p = .042$) predicted maladaptive coping ($R^2 = .057$, $F(2, 722) = 22.2$, $p < .001$). While findings imply that there is no direct correlation between general family functioning and social media use, family functioning is still a key factor in emerging adults' coping. Therefore, the negative effects of excessive social media use can be diminished by incorporating interventions tailored to improve family functioning.

Keywords: Family functioning; Maladaptive coping; Social media use

1.0 Introduction

The transition from adolescence to full-fledged adulthood entails the intensification of responsibilities and roles. Emerging adults are being bombarded with tremendous pressure and expectations consonant with sojourning in the aforementioned phase of life. Hence, they become susceptible to stress to a greater extent (Brito and Soares, 2023). In many instances, people accustom themselves to the stressors by ignoring the issue and regaining a sense of control by doing other things that would appear as counterproductive and ineffective, such as binge eating, sleeping late, impulsive buying, and binge-watching (Sutton, 2024). These maladaptive coping can actually be influenced by several factors, specifically their general family functioning and social media use. However, there

is a research gap brought by the limitation of research discussing the array of the three variables among emerging adults in the Philippine setting. Nonetheless, their connection has been independently supported by various international literature.

Firstly, general family functioning was regarded to affect the engagement of emerging adults in maladaptive coping. The family is a child's prime and fundamental social interaction (South Carolina Department of Social Services, 2021). It is through these family interactions that children will adopt and validate beliefs, attitudes, behaviors, practices, and even coping styles (Mincu, 2024). Herewith, their family functioning may induce the likelihood of emerging adults engaging in different maladaptive coping (e.g. binge eating). For instance, a study by Lee et al. (2018) asserted that good family functioning serves as a protective barrier against binge eating among adolescents. While a study by Osborne (2019) found that family dysfunction increases the likelihood of college students having eating disorders.

Secondly, social media use is another factor that may escalate the prospect of emerging adults engaging in maladaptive coping. Social media lets them be involved in the discussions of innumerable topics that may be prominent and rampant in an area. These topics may come out as internet trends that people would conform to (Encyclopædia Britannica, 2024). Case in point, a study by Kim and Mackert (2022) revealed that social media use significantly affects the binge-eating behaviors of people. As people highly engage with social media, more likely they are to have an increased intention to eat and follow certain eating habits, which may lead to binge eating. Ahmed et al. (2022) also discussed how social media use may generate conversations regarding trending shows or movies, which accordingly affect the binge-watching behavior of people.

These understandings depict how general family functioning and social media use independently affect emerging adults' maladaptive coping. However, as stated, there is a limitation in the discussion regarding the totality of the aforementioned variables among emerging adults in the Philippines. Consequently, this study aimed to fill that particular research gap. By recognizing their correlation, emerging adults can make more informed decisions to improve their coping and overall well-being, and various individuals may better support them as they deal with the stressors brought by emerging adulthood.

2.0 Methodology

2.1 Research Design

A descriptive correlational strategy was employed in the study to explore the relationship between general family functioning, social media use, and maladaptive coping mechanisms among emerging adults. This design was employed as it allowed the researchers to gather data on multiple variables without manipulating any of them. The goal was to observe and analyze these variables as they naturally occur and identify potential trends or correlations between them.

2.2 Research Locale

This study was conducted at a university in the National Capital Region. The university offers a diverse range of academic programs, making it an ideal setting for research due to its representation of different student groups.

2.3 Research Participants

The population for this study consisted of 1,575 college students enrolled in the summer semester of the academic year 2023-2024 from a non-sectarian private university in NCR. The students came from various academic programs, including Information Technology, Hospitality Management, Tourism, Nursing, Education, Biology, and Psychology. Stratified sampling was used to ensure that the sample adequately represented all programs. The total sample size was calculated using Raosoft software, which considered the entire population, a 95% confidence level, and a 5% margin of error. This resulted in a final sample size of 854 respondents. However, only 725 answered due to schedule conflict, giving an attrition rate of 15%.

2.4 Research Instrument

Socio-demographic Data

A socio-demographic questionnaire was used to solicit the age, sex, and type of family of the respondents. In other studies, it was found that these demographics influenced both social media and the coping behaviors of emerging

adults. According to previous studies, ages 18 - 25 or emerging adults are transitioning from childhood to adulthood characterized by increased exposure to stressors. Moreover, age affects social media usage because young adults are often more active on social media, potentially influencing their coping behaviors. Similarly, various studies demonstrated that males and females use social media and cope with stress in different ways. The type of family also plays an important role in how one copes. These emerging adults may experience a variety of emotional support and communication depending on the type of family, influencing their coping behaviors and usage of social media.

Social Media Use Questionnaire

For their social media use, which is a dependent variable, the respondents were asked for the duration/frequency of their social media use, the type of social media used (e.g. Tiktok, Instagram, Facebook, and Twitter), and its content (e.g. Online shopping, eating unhealthy foods, sleeping late, binge-watching, binge-eating, online games). The frequency they countered the content of their social media was scored from 1 to 5, which were never, rarely, sometimes, often, and always, respectively. The respondents' top 2 self-reported coping mechanisms were also asked. Since this tool was self-made, the researchers had this tool validated by a research expert to remove any bias. To ensure its reliability and validity, a pilot testing was done which involved 19 participants from the same university (Cronbach alpha = 0.711, $p > 0.001$). Social media use according to hour is based on Kavanagh's (2022) thesis regarding social media and coping. The type of social media used and its contents is based on a study by Shabaznezhad et al. (2022) where they analyzed the role of social media platforms and user engagement.

Family Assessment Device (FAD)

The Family Assessment Device (FAD) - General Functioning subscale, developed by McMaster, was used to measure general family functioning. This is a 12-item tool that evaluates family interactions, communication, and problem-solving on a 4-point Likert scale, where "1" represents strongly disagree and "4" represents strongly agree. The FAD was chosen due to its reliability and previous validation in various family studies. It allowed the researchers to assess the overall health and functioning of the respondents' families. The researchers did not modify any of the original questions in the FAD. Previous studies have demonstrated that this tool has high reliability (Cronbach alpha = 0.92, $p > 0.001$).

Brief-COPE for Maladaptive Coping

The Brief-COPE instrument developed by Carver (1997) was used to measure maladaptive coping strategies among respondents. This 28-item tool evaluates different coping mechanisms, and for this study, only the maladaptive coping items (such as denial, disengagement, and substance use) were analyzed. The Brief-COPE uses a Likert scale ranging from "1" (I haven't been doing this at all) to "4" (I've been doing this a lot). Two questions were removed from the original 28-item instrument to align the tool with the study's specific objectives. This instrument has been validated in previous studies, with a demonstrated reliability (alpha = 0.81-0.82).

2.5 Data Gathering Procedure

Lists of respondents were acquired through their batch presidents, who were chosen at an earlier date based on an internal election conducted by the student body of each college. After acquiring the lists, respondents were recruited through their batch presidents/representatives who have access to the presidents of each block through which they disseminated the survey links via email and social media platforms (Facebook Messenger). Data from the survey questionnaires were collected online through Google Forms, allowing participants to respond at their convenience. For those with limited internet access, respondents had the option to log into the Wi-Fi network provided by the school, accessible through their student identification number. At their request, participants would be provided with a digital copy of the survey which they can print and scan to allow a manual entry of their responses. Regarding difficulty or questions in answering the survey, participants were placed in a group chat on Facebook Messenger with a member of the research team. All questionnaires were recorded with the participant's consent and transcribed into a linked Google Sheet for later analysis. To ensure confidentiality, personal identifiers were removed from the secured respondent data.

2.6 Ethical Considerations

Ethics clearance was obtained from the Institutional Ethical Review Committee. The approval was granted after a thorough review of the study's protocols, ensuring that all ethical standards, including the confidentiality and anonymity of respondents, were upheld throughout the research process.

3.0 Results and Discussion

The results include the fulfillment of the objectives and refer to general family functioning impacts on coping strategies, social media use, maladaptive coping behaviors, family structure, age, and sex along with their respective correlations. Table 1 shows the majority of our respondents are from the age group 20 to 21 years old. A staggering amount of our respondents are also female. It shows gender-specific trends among female emerging adults and may give insight into the general family functioning and maladaptive coping behaviors of women in this age bracket. Furthermore, a large group of our study's respondents belonged to families with a nuclear structure (65.4%). In comparison, others belonged to extended families (17.0%), single-parent families (13.9%), step-families (2.6%), and co-parenting families (0.3%).

Table 1. Demographic profile of the samples ($n = 725$)

Characteristics	N	Characteristics	N	Characteristics	N
Age		Sex		Type of family	
18 - 19 years old	196	Male	175	Nuclear	474
20 - 21 years old	382	Female	550	Single-parent	101
22 - 23 years old	128			Extended	123
24 - 25 years old	19			Step-family	19
				Grandparent	6
				Others: Co-parenting	2

Table 2 shows the BRIEF-COPE results of the respondents which is how they cope in times of stress. For item 3, 'I've been saying to myself "this isn't real.;" the respondents reflected a mean of 1.73 with a descriptive equivalent of "I haven't been doing this at all" This suggests that when faced with a problem, the respondents try to deal with their problems and do not deny it. This can be seen as a positive indicator of being emotionally ready in times of challenging situations and being proactive in solving problems. For item 6, 'I've been taking action to try to make the situation better;' the respondents reflected a mean of 3.26 with a verbal interpretation of "I've been doing this a lot." This suggests that the respondents try to find ways to manage or improve the situation they are in. Similar to Item 3, Item 6 is about being proactive in problem-solving and taking control of their situation. For item 17, 'I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping;' the respondents reflected a mean of 3.32 with a verbal interpretation of "I've been doing this a lot."

Table 2. Brief-COPE Inventory of the respondents

Item	Mean	SD	Verbal Interpretation
3. I've been saying to myself "This isn't real."	1.73	0.859	I've been doing this a lot
6. I've been taking action to try to make the situation better.	3.26	0.721	I've been doing this a lot
14. I've been giving up the attempt to cope.	1.80	0.865	A little bit
17. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.	3.32	0.791	I've been doing this a lot
Weighted Mean Response	2.75	0.374	A medium amount

This suggests that the respondents frequently try to distract themselves with entertainment or leisure activities. Regular engagement in these activities means that individuals prefer to divert their attention rather than address the underlying issues which might indicate that they find these things more comforting compared to confronting their concerns head-on. The weighted mean response for maladaptive coping as seen in Table 2 is 2.75 and its verbal interpretation is "a medium amount." This suggests that when faced with stressful situations, the respondents try to cope using a variety of coping strategies, rather than relying on just one mechanism: adaptive (e.g. acceptance or positive reframing) or maladaptive (e.g. denial).

Based on Table 3, online gaming has a mean score of 4.21, which indicates that this maladaptive coping behavior was always encouraged, supported, or depicted on social media. TikTok being the most popular social media platform plays a role in the popularity of gaming among the respondents. The target population which is the

emerging adults are young individuals who know a lot about gaming and technology. Online shopping/buying being the second most frequently observed social media with a mean score of 3.79 might be due to the fact that TikTok is easily accessible and appeals to the general population videos, which creates a conducive environment for showcasing products. The weighted mean score of the respondents is 3.44 with a verbal interpretation of “frequently”. This means that the respondents frequently observed this type of content on social media.

Table 3. *Distribution of maladaptive coping behaviors being supported, encouraged, or depicted on social media by respondents*

Maladaptive Coping Behaviors	Mean	SD	Verbal Interpretation
Online Shopping	3.79	1.601	Frequently
Eating unhealthy food (e.g. fast food, sodas, junk food)	3.29	0.970	Occasionally
Sleeping late	3.66	1.062	Frequently
Binge watching	3.51	1.048	Frequently
Binge-eating	3.09	1.078	Occasionally
Others: Online Gaming	4.21	0.867	Always
Weighted Mean Response	3.44	0.711	Frequently

Furthermore, as shown in Table 3, online gaming has a mean score of 4.21, which indicates that this maladaptive coping behavior was always encouraged, supported, or depicted on social media. Online gaming being the most frequently observed content in social media is supported by Sailer and Homner (2020) stating that it is becoming more popular since it can be a source of entertainment and relaxation. Additionally, TikTok being the most popular social media platform (see Table 2) plays a role in the popularity of gaming among the respondents. Once an individual shares or interacts with a certain content, the algorithm will detect it, amplifying the gaming content being observed. This cyclical nature of content consumption is a key factor in the development of maladaptive behaviors. Algorithms that amplify specific content based on user interactions can reinforce unhealthy behaviors, making it difficult for individuals to break out of negative coping cycles. As research by Redmond (2019) suggests, social media's ability to continuously feed similar content can result in emotional disengagement and avoidance behaviors, further exacerbating maladaptive coping. This can lead to a cycle of content consumption and behavior adoption since users are continuously exposed to similar types of content.

The correlation analysis in Table 4 shows the relationships between the variables: Social media use, maladaptive coping, age, sex, and type of family. There is a significant positive correlation of general family functioning ($p = 0.000$), the type of family ($p = 0.000$), and maladaptive coping ($p = 0.049$) with each other, suggesting that these variables are related. The results indicated that social media use was significantly correlated with age ($p = 0.039$), sex ($p = 0.000$), and maladaptive coping ($p = 0.000$) and that these variables are related. No correlation was found using social media use regardless of the type of family ($p = 0.716$), age ($p = 0.326$), and maladaptive coping type.

Table 4. *Correlation analysis matrix*

Variables	p-value				
	Age	Sex	Type of family	Social media use	Maladaptive coping
General Family Functioning	0.527	0.454	0.000	0.775	0.049
Social Media Use	0.039	0.000	0.716		0.000
Maladaptive Coping	0.326	0.025	0.527		

Note: Bold values indicate significant p -values. Correlation is significant at the 0.05 level (2-tailed).

The results highlight a significant age-related trend in maladaptive coping, especially among younger emerging adults, who are at a critical transitional stage characterized by heightened psychological vulnerability. Previous studies have shown that coping strategies often evolve during this life stage as individuals navigate increased independence and responsibility (Brito & Soares, 2023). Thus, the prevalence of maladaptive coping among the 20-21 age group in this study underscores the need for targeted interventions to improve coping mechanisms. A large group of respondents (see Table 1) belonged to the age group of 20 to 21 years old (52.7%), while the remaining respondents belonged to the other age groups of 18-19 (27.0%), 22-23 (17.7%), and 24-25 (2.6%). Emerging adulthood entails psychological, physiological, and social changes that cause high stress and negatively impact health (Dungog et al., 2021).

Moreover, having good family functioning is crucial to streamlining this period of transition in the lives of emerging adults. Positive family dynamics not only provide emotional support but also foster effective problem-solving skills, which are essential for navigating the challenges of emerging adulthood. Studies by Gervais et al.

(2019) and Jabbari et al. (2023) suggest that families with strong communication and cohesion can significantly reduce the likelihood of maladaptive coping behaviors by providing a stable environment in which individuals can process stress. Based on Table 1, 65.4% of the respondents belonged to families with a nuclear structure. The respondents being predominantly from nuclear families suggest that having better coping behaviors resulted from having good family functioning, indicated by emotional support and communication.

Interestingly, the findings also shed light on the importance of family structure in influencing coping mechanisms. Individuals from nuclear families were shown to have better family functioning scores compared to those from single-parent or extended families. This suggests that the composition of the family unit plays a role in the emotional resources available to individuals, thereby impacting their ability to cope with stress effectively. It can be seen from Table 4, that general family functioning and the type of family were found to be statistically significant. This means that the type of family correlates to the kind of functioning their family has, as stated in Lanozo et al. (2021), where minors from broken families learn to handle difficulties from a young age, resulting in them learning to cope with life earlier than most and staying positive despite the status of their family. Additionally, Jabbari et al. (2023) state that, unlike challenging family connections that are characterized by frequent criticism, conflicts, and high expectations, stable and empathetic familial ties offer love, caring, and support.

As shown in Table 4, there was a significant relationship between general family functioning and maladaptive coping. The results showed that general family functioning and maladaptive coping had a direct proportional relationship. This proportional relationship suggests that family environments characterized by high dysfunction may limit the emotional resources available to individuals, making them more susceptible to stress. Moreover, families with poor functioning often lack the communication skills and emotional support necessary to develop effective coping strategies, as noted by Lanozo et al. (2021). These findings are critical in understanding how family interventions could improve coping mechanisms in emerging adults. Reflecting on the results of the study, it can be inferred that another study done by Lanozo et al. (2021) also had the same concept. The family significantly affects how individuals learn how to handle difficult situations. As a family, they depend on each other for support (Jabbari et al., 2023). Having strong family ties affects having positive coping strategies. Those emerging adults who are more connected with their families have healthier ways to cope (Gervais et al., 2019). In relation to this, a study done by Caurel (2023) found that when a family fully supports their children, they will become emerging adults who can cope effectively with different challenges and develop adaptive attitudes.

Moreover, we can see from Table 4 that social media use and age were found to be statistically significant, as well as social media use and sex. This means that the type of social media use and age correlate to one another, as stated in Redmond (2020), where due to a lack of parental supervision, young adults at college are more likely to use the internet. It also indicates that social media and sex correlate as stated in Vieira (2022), where adolescent females used social media excessively at a rate approximately twice that of boys.

In addition, there was a significant relationship between social media use and maladaptive coping. This result is similar to the results of Faraci's (2023) study, wherein, it showed that watching dietary and exercise contents would result in body dissatisfaction then leads to disordered eating behaviors. Additionally, according to Sanzari (2023), exposure to weight loss content was associated with poor body image, vomiting, and frequent use of laxatives. Moreover, the more an individual uses social media, the higher the likelihood of having an increased appetite, leading to binge eating (Kim and Mackert, 2022) since it promotes an unrealistic body image, which affects body dissatisfaction (Rizwan et al., 2022). In addition, it can also lead to the formation of maladaptive coping through negative social comparison (Brimmel et al., 2023). As seen from Table 4, maladaptive coping and sex were found to be statistically significant. This means that maladaptive coping and sex are correlated, as stated by Graves et al. (2021), where individual coping techniques and coping characteristics adopted showed clear gender variations.

Table 5 shows the regression analysis for the variables Family functioning, Social media use, and Maladaptive coping. A linear regression was conducted using the composite score for Social media use and Family functioning to predict maladaptive coping. The results showed that Social media use ($b = 0.1205$, $p < .001$) and Family functioning ($b = 0.0505$, $p = .042$) predicted the Maladaptive coping ($R^2 = .057$, $F(2, 722) = 22.2$, $p < .001$).

Table 5. *Regression analysis*

Variables	b	p	R2	F
General Family Functioning	0.050	.042		
Social Media Use	0.120	.001		
Maladaptive coping		.001	.057	22.22

The findings suggest that lower levels of Family functioning were associated with the increase in Maladaptive coping. As previously cited people with strong communication and cohesion with their families can significantly lessen the probability of having maladaptive coping behaviors by which the individual has a stable and free environment where they can process emotions (Jabbari et al. 2023). Additionally, having a higher level of Social media use, also predicted having an increase in Maladaptive coping. When there is an increase in exposure to specific social media content related to maladaptive coping, individuals who engage in social media use results show that these coping behaviors are adopted (Graves et al. 2021).

4.0 Conclusion

With the study's well-grounded foundation, the researchers were able to attain sufficient and relevant insights that answered the research questions and helped achieve the aims of the study. The findings revealed that emerging adults who belong to the age group of 20-21 years old engaged in social media more compared to other age groups with a p-value of 0.039. Females were also regarded to use social media more than males with a p-value of 0.000. In line with this, females also engaged in maladaptive coping more as opposed to males with a p-value of 0.025. Furthermore, emerging adults who belong to a nuclear family were seen to have good general family functioning compared to other types of families with a p-value of 0.000. With these being stated, the general family functioning and social media use of emerging adults independently affect the way they cope in response to stressors, with a p-value of 0.049 and 0.000, respectively.

On the other hand, the researchers also found some variables that did not have any significant relationship with each other. The age and general family functioning of emerging adults were seen to not have a significant relationship with each other, with a p-value of 0.527. Age and maladaptive coping were also not significantly related, with a p-value of 0.326. Moreover, sex and general family functioning were seen to not be significantly related to each other, with a p-value of 0.454. The type of family did not also have a significant relationship with either social media use or maladaptive coping of emerging adults, with a p-value of 0.716 and 0.537, respectively. In addition, general family functioning and social media use were not significantly related to each other with a p-value of 0.775.

Given these findings, emerging adults can now understand how their coping behaviors are being affected by their family functioning and social media use. Hence, they may make more informed decisions that will bring about their wellness in response to stressors. Secondly, this study will also help families to realize the essence of strengthening familial relationships. Through this study, they can build a supportive and nurturing environment for emerging adults to grow as they strive to deal with the transition between adolescence and full-fledged adulthood. Thirdly, these findings will aid nurses in attaining an adequate rationale for establishing effective and efficient family interventions that will cater to strengthening families, enabling them to communicate better and have enhanced relationships with one another. Nurses will also have a basis to incorporate the effects of social media use on emerging adults' quality of life as they conduct health education aimed at the overall wellness of emerging adults. Lastly, the findings of this study were able to fill in the research gap brought by the limitation of research discussing the correlation between the three variables among emerging adults in the Philippines. Hence, this study may also help future researchers who would like to delve into the topic deeper.

5.0 Contributions of Authors

The authors all contributed equally to each section. The authors have also reviewed and approved the final work.

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This study did not receive funding from any agency or other individuals.

7.0 Conflict of Interests

The authors hereby declare that there is no conflict of interest about the publication of this paper.

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A Descriptive Assessment of Organizational Climate, Leadership Behavior, Work-Life Balance, and Employee Retention Among Healthcare Instructors

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Abstract. This study examined organizational climate, leadership behavior, and work-life balance and their influence on employee retention among healthcare instructors. A descriptive-quantitative research design involved 295 healthcare instructors in the Davao Region, Philippines. Data were analyzed using mean and standard deviation. Results showed a positive organizational climate characterized by favorable working conditions, job satisfaction, and strong interpersonal relationships. Leadership behaviors, particularly task-oriented and results-driven approaches, were highly rated by instructors. However, work-life balance was only moderately perceived, indicating areas for improvement in managing work demands and personal responsibilities. Employee retention was high, driven by training, rewards, and career development opportunities. The findings highlight the critical role of enhancing leadership practices, fostering a supportive organizational environment, and improving work-life integration to sustain retention. The study implies that adopting flexible work policies, offering wellness initiatives, and investing in professional development can strengthen employee satisfaction and commitment. These strategies support individual well-being and contribute to organizational productivity and effectiveness.

Keywords: Organizational climate; Leadership behavior; Work-life balance; Employee retention; Healthcare instructors

1.0 Introduction

Faculty retention in medical sciences universities is critical due to various challenges healthcare instructors face, including heavy workloads, inadequate benefits, and work-life imbalances. These issues complicate efforts to retain skilled faculty, essential for maintaining high educational and healthcare standards. Organizational support, leadership quality, and resource management are pivotal in addressing these challenges. However, the competitive nature of the healthcare sector makes faculty retention a persistent challenge for educational institutions and healthcare organizations alike.

In the international arena, studies emphasize the importance of supportive organizational climates and leadership behaviors in faculty retention. For instance, research by Salajegheh et al. (2022) highlights the role of effective human resource management, while studies in the U.S. and Canada underscore the significance of positive workplace cultures and leadership in enhancing job satisfaction and career contentment (Xierali et al., 2021;

Boamah et al., 2023). Conversely, as noted by Vican et al. (2020) and Ali (2022), poor working conditions and work-life imbalance are major contributors to dissatisfaction and turnover intentions.

Despite extensive research on general employee retention, there is a significant gap in understanding healthcare instructors' unique challenges, particularly concerning work-life balance, leadership behaviors, and organizational support (Harris, 2019). This gap limits the development of targeted retention strategies tailored to this specialized workforce. This study fills the gap by investigating organizational climate, leadership behavior, work-life balance, and their collective influence on employee retention in healthcare education. Focusing on healthcare instructors in the Davao Region, Philippines, the findings provide actionable insights for administrators and policymakers. The study contributes to evidence-based strategies that address faculty-specific challenges, enhance job satisfaction, and ensure the sustainability of healthcare education systems.

2.0 Methodology

2.1 Research Design

This study utilized descriptive-quantitative design to examine the organizational climate, leadership behavior, work-life balance, and employee retention among healthcare instructors. A questionnaire served as the primary data collection tool, aligning with the descriptive method's focus on characterizing the population.

2.2 Research Locale

The study was conducted in the Davao Region, Philippines, focusing on higher education institutions (HEIs) that offer allied health programs accredited by the Commission on Higher Education (CHED). These programs include Nursing, Medical Technology, Pharmacy, Radiologic Technology, and others. Among the 105 HEIs in the region, only 20 offered health courses, primarily in Davao del Sur, Davao del Norte, and Davao Oriental. The diverse geographic and institutional settings were chosen to ensure a comprehensive and representative dataset for analyzing healthcare faculty retention.

2.3 Research Participants

The study involved 295 full-time healthcare instructors from allied health programs in the Davao Region, Philippines, selected through stratified random sampling. Eligible participants had over six months of teaching experience in accredited programs such as Nursing, Medical Technology, Pharmacy, Radiologic Technology etc. Institutions in Davao del Sur, Davao del Norte, and Davao Oriental were included, excluding areas without health programs. The sample size was determined using the Raosoft calculator with a 5% margin of error and 95% confidence level. Stratification ensured proportional representation across identified strata.

2.4 Research Instrument

This study utilized adapted, validated standardized questionnaires, including the Organizational Climate scale ($\alpha = 0.807$) by Nataro and Araujo (2014), the Leadership Behavior scale ($\alpha = 0.909$) by Ozsahin (2019), the Work-Life Balance scale ($\alpha = 0.805$) by Agha et al. (2017), and the Employee Retention scale ($\alpha = 0.808$) by Caredo et al. (2022).

2.5 Data Gathering Procedure

The study adhered to rigorous ethical standards in investigating organizational climate, leadership behavior, work-life balance, and employee retention among healthcare instructors in Davao Region. Ethical approval was obtained from the Liceo Research Ethics Board, and permissions were secured from the participating institutions. Participants were informed about the study's purpose, voluntary nature, and data confidentiality, and informed consent was collected online. An online survey via Google Forms facilitated convenient, unbiased data collection. Data were processed and analyzed with the assistance of a statistician to ensure accuracy.

2.6 Ethical Considerations

The study followed rigorous ethical protocols to ensure scientific integrity, participant welfare, and compliance with the Data Privacy Act 2012. Privacy was protected through anonymized data collection, and transparency was upheld by informing participants of the study's purpose, risks, and benefits. Recruitment involved authorized institutional permissions, with voluntary participation and withdrawal rights. Risks were minimal, and findings will be disseminated through academic channels, respecting confidentiality and community norms. No financial incentives were provided to avoid coercion.

2.7 Data Analysis

This study utilized Mean and Standard Deviation. The mean was used to summarize continuous data and provide an understanding of central tendencies. At the same time, the standard deviation measured the variability or dispersion of the data relative to the mean. These statistical tools were employed to describe the levels of organizational climate, leadership behavior, work-life balance, and employee retention among healthcare instructors.

3.0 Results and Discussion

This presents a systematic analysis and interpretation of data aligned with the study's objectives. Findings are examined using appropriate statistical techniques to ensure accuracy and relevance to the research problem. The analysis emphasizes evaluating the levels of organizational climate, leadership behavior, work-life balance, and employee retention among healthcare instructors.

Table 1 highlights the organizational climate among healthcare instructors, showing a high overall organizational climate level ($M = 3.85$, $SD = 0.579$). Key findings include positive perceptions of working conditions ($M = 3.75$, $SD = 0.556$), role satisfaction ($M = 3.78$, $SD = 0.743$), and interpersonal relationships ($M = 4.00$, $SD = 0.643$). These results emphasized fostering supportive environments, enhancing job satisfaction, and promoting collaboration to improve retention and performance, benefiting both instructors and institutions. While the current study suggests generally manageable workloads and a supportive environment for healthcare instructors, some variability in individual experiences remains. This variability, particularly concerning workload management and alignment with institutional culture, may lead to pockets of dissatisfaction even in otherwise positive organizational climates, as noted by Arian et al. (2018).

Table 1. *Level of organizational climate among healthcare instructors*

Indicators	Mean	Std. Dev.	Interpretation
Working Conditions	3.75	0.556	High
Satisfaction	3.78	0.743	High
Interpersonal Relationships	4.00	0.643	High
Overall Mean	3.85	0.579	High

Legend: 4.51-5.00 (Very High), 3.51-4.50 (High), 2.51-3.50 (Moderate), 1.51-2.50 (Low), 1.00-1.50 (Very Low)

Table 2 illustrates the leadership behavior among healthcare administrators, with a high overall mean score ($M = 3.94$, $SD = 0.648$). Indicators include task-oriented ($M = 3.93$, $SD = 0.721$), results-oriented ($M = 3.96$, $SD = 0.719$), and change-oriented ($M = 3.93$, $SD = 0.622$) behaviors, reflecting a strong focus on productivity, outcomes, and adaptability. These behaviors enhance instructor engagement, innovation, and resilience in a dynamic healthcare education environment. Organizations should sustain this culture to improve performance, satisfaction, and retention, benefiting faculty and institutional objectives.

Table 2. *Level of leadership behavior among healthcare instructors administrators*

Indicators	Mean	Std. Dev.	Interpretation
Task-Oriented	3.93	0.721	High
Results-Oriented	3.96	0.719	High
Change-Oriented	3.93	0.622	High
Overall Mean	3.94	0.648	High

The findings of de Oliveira and da Costa Rocha (2017) align with the study results, highlighting the need for a balanced leadership approach that combines task-oriented and relational behaviors. While healthcare administrators excel in task and results orientation, lower scores in individualized coaching and communication suggest a greater focus on relational leadership to strengthen staff connections. Previous research by Blanchard (2015) and Rajbhandari (2017) supports this, emphasizing that effective leadership requires attention to both task completion and interpersonal relationships to avoid diminishing employee morale.

Table 3 presents the work-life balance levels among healthcare instructors, revealing a moderate balance between work and personal life. The overall mean score of 3.04 ($SD = 0.361$) suggests a challenging but manageable relationship. Work interference with personal life scored 3.18 ($SD = 0.834$), indicating moderate disruption, while

personal life interference with work was lower at 2.77 (SD = 0.397). The work-life enhancement score of 3.17 (SD = 0.511) suggests some positive impact of work on personal life. These findings emphasize the importance of policies supporting work-life balance and well-being. The data suggests a moderate work-life interference, indicating opportunities for healthcare organizations to improve work-life balance and overall employee satisfaction. Studies by Mauno et al. (2015) and Karatepe & Avci (2017) highlight similar findings, where healthcare professionals face work-life imbalance due to job demands, and organizational culture, management support, and family-friendly policies play a key role in fostering a healthy balance. Addressing these areas can create a more supportive environment, benefiting healthcare instructors and institutions.

Table 3. *Level of work-life balance among healthcare instructors*

Indicators	Mean	Std. Dev.	Interpretation
Work Interference with Personal Life	3.18	0.834	Moderate
Personal Life Interferences with Work	2.77	0.397	Moderate
Work Personal Life Enhancement	3.17	0.511	Moderate
Overall Mean	3.04	0.361	Moderate

Table 4 presents the level of employee retention among healthcare instructors, showing high satisfaction across various indicators. The overall mean score of 3.68 suggests positive experiences with training, rewards, remuneration, welfare, performance appraisal, and career growth. In particular, instructors expressed satisfaction with training (3.58), rewards and recognition (3.81), and performance appraisals (3.78). At the same time, remuneration (3.63) and welfare benefits (3.64) were generally viewed positively, but some variability exists, indicating room for improvement. Career growth opportunities (3.65) were also rated positively, which is crucial for enhancing retention. The high overall score for employee retention indicates strong satisfaction among healthcare instructors, particularly in areas like professional development, recognition, compensation, and career growth. However, the study also highlights areas for improvement, such as workload management, compensation, and career development. While most instructors share similar views on retention, there is room for institutions to refine their strategies by focusing on consistency and addressing specific concerns, ensuring a positive work environment to enhance long-term commitment and reduce turnover.

Table 4. *Level of employee retention among healthcare instructors*

Indicators	Mean	Std. Dev.	Interpretation
Training and Development	3.58	0.678	High
Rewards and Recognition	3.81	0.723	High
Remuneration	3.63	0.830	High
Welfare Benefits	3.64	0.677	High
Performance Appraisal	3.78	0.588	High
Career Growth	3.65	0.423	High
Overall Mean	3.68	0.482	High

4.0 Conclusion

This study assessed organizational climate, leadership behavior, work-life balance, and employee retention among healthcare instructors, highlighting key factors that influence faculty satisfaction and long-term commitment. Positive working conditions, job satisfaction, and strong interpersonal relationships emerged as motivators, while effective leadership behaviors—task-oriented, results-driven, and change-oriented—enhanced employee engagement. However, moderate levels of work-life balance revealed challenges, particularly with work interfering in personal life, requiring attention from institutions. These findings underscore the importance of fostering a supportive organizational climate, implementing leadership development programs, and promoting work-life integration through flexible arrangements and wellness initiatives. For future researchers, expanding this study to other regions or industries could provide a broader understanding of faculty retention dynamics. In contrast, longitudinal and qualitative studies could uncover deeper insights into how organizational strategies influence retention over time and across varying healthcare roles.

5.0 Contributions of Authors

All authors contributed equally to this research.

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7.0 Conflict of Interests

The author confirms no conflicts of interest related to this study.

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Emotional Intelligence, Attachment Style, and Marital Satisfaction among Married Employees

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Abstract. . This study explores emotional intelligence and attachment style as determinants of marital satisfaction among married employees of one of the polytechnic state colleges in the Bicol Region, specifically in the province of Camarines Sur. A mixed method research design was utilized in this study to collect both qualitative and quantitative data from the respondents. Using a purposive and convenience sampling technique, 114 married employees were involved. The main data for this study was accomplished through three (3) standardized questionnaires, wherein, five (5) participants who are high scorers in Kansas Marital Satisfaction Scale were sought for an in-depth interview. The study revealed that most of the respondents were females, aged 40-59 years old, married for 1-10 years, regular faculty employees, belong to middle class with a monthly income between Ph 43, 829- Php 76, 699. Majority of the respondents have an average emotional intelligence and is high on secure, and average in anxious/ambivalent, and avoidant sub-scale of attachment style with high levels of marital satisfaction. The themes created for the variables of the study were life skills, relationship perspectives, and shared values. Lastly, there is no significant correlation connecting either emotional intelligence or attachment style to marital satisfaction, implying that these are not good predictors of marital satisfaction for the respondents in consideration. Given the absence of correlation between emotional intelligence and attachment style in predicting marital satisfaction, therapists and counselors should consider integrating alternative therapeutic interventions that aims to enhance emotional intelligence, have a more close and secure bond and cultivate strong and fulfilling marital relationship. It is also essential to explore the role of contextual variables that could moderate or mediate the relationship between emotional intelligence, attachment styles, and marital satisfaction such as socio-economic factors, cultural backgrounds, or specific life circumstances.

Keywords: Emotional intelligence; Attachment style; Marital satisfaction; Life skills; Relationship perspectives; Shared Values

1.0 Introduction

Marital satisfaction is one of the goals of marriage. It serves as one of the indicators of the success of a marriage, to determine the quality of the relationship of the couple, and to strengthen the basis for married life. Many couples strive to attain a satisfying and long-lasting marriage despite the common belief that there is no perfect marriage. Chehreh et al. (2018), reported that there are different factors that can influence and predict higher levels of marital satisfaction in couples. One of these factors are socioeconomic status, education, age, ethnicity, religious beliefs, physical attractiveness, intelligence quotient, and personal values and attitudes. Aside from these factors, the present study aimed to explore other determinants of marital satisfaction, such as emotional intelligence and attachment style.

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Emotional intelligence, otherwise known as emotional quotient or EQ, is the ability of oneself to manage and understand his or her own emotion as well as the emotion of others. Because married life inevitably encounters trials, difficulties, feelings of failure, and disappointments, spouses tend to prioritize emotions over wisdom and reasoning. It is for this reason that emotional intelligence plays a crucial role in ensuring marital satisfaction. In a study conducted by Ada and Etele (2020) findings revealed a significant relationship between emotional intelligence and marital satisfaction among married secondary school teachers in the Nigerian state of Anambra. This relates to the present study as it will also focus on married employees of a school, most of whom are teachers.

Aside from emotional intelligence, another determinant of marital satisfaction considered in this study is attachment style. The attachment style of a person is one of the key factors in a marriage. Gonsalves and Hallet (2024) defined attachment style as a specific pattern of behavior in and around relationships. According to them, there are four adult attachment styles: secure attachment, anxious attachment, avoidant attachment, and fearful-avoidant (also known as disorganized) attachment. Secure attachment is considered the healthy ideal for relationships. Meanwhile, anxious attachment style is a type of insecure attachment style marked by a deep fear of abandonment. People with an anxious attachment style tend to be very insecure about their relationships, often worrying that their partner will leave them. This results in a hunger for validation. There is also the avoidant attachment style, which is a type of insecure attachment style marked by a fear of intimacy. People with an avoidant attachment style tend to have trouble establishing closeness with others or trusting others in relationships, because they ultimately do not believe that their needs can be met in a relationship. Lastly, fearful-avoidant attachment style is a combination of both the anxious and avoidant attachment styles. People with fearful-avoidant attachment both desperately crave affection and want to avoid it at all costs. Knowing the attachment styles of one's partner can contribute to better adjustments and acceptance of marriage, resulting in improved marital satisfaction of both spouses.

As a result, the researcher was motivated to conduct this study to explore emotional intelligence and attachment style as determinants of marital satisfaction among married employees of one of the polytechnic state colleges in the Bicol Region, specifically in the province of Camarines Sur. This study could contribute significantly to the existing body of literature by providing empirical data specific to the Bicol Region, filling a gap in research concerning Filipino marriages and the relationship of emotional intelligence and attachment styles. The findings of the study have practical implications for counseling, therapy, and clinical practice. Understanding how emotional intelligence and attachment style influence marital satisfaction can inform interventions and therapeutic approaches aimed at improving relationship dynamics, communication patterns, and conflict resolution strategies for couples in therapy.

2.0 Methodology

2.1 Research Design

This research employed a mixed methods approach, integrating both quantitative and qualitative techniques for data collection, gathering, and analysis. According to Schoonenboom and Johnson (2017), as cited by Dawadi (2021), mixed methods research is characterized by the collection of both quantitative and qualitative data, the integration of these two types of data, and the application of distinct designs that may incorporate philosophical assumptions and theoretical frameworks. The researchers adopted a sequential explanatory design, which involves first collecting quantitative data followed by qualitative data.

For the quantitative component, various tests were utilized to analyze the raw scores obtained from the questionnaires. The researchers applied statistical tools including mean and standard deviation, weighted average mean to assess the levels of subscales for each variable, as well as correlation coefficients and one-way ANOVA to explore relationships, statistical implications, and significance between emotional intelligence and attachment style. The qualitative part of this research utilized the phenomenological approach using in-depth interviews among married employees to get responses from the participants. Moreover, employing a phenomenological approach allowed for the voice of the individuals experiencing satisfying and fulfilling marriages. This approach enabled them to articulate and share their stories, offering rich descriptions of their lived experiences. The researcher also transcribed and analyzed the responses to form emerging concepts, sub categories, categories and

theme. Lastly, the qualitative data was presented through a form of narration and descriptions using pseudonyms assigned by the researchers to ensure anonymity.

2.2 Research Locale

This study was carried out in one of the state colleges located in one of the 1st class municipalities in the province of Camarines Sur. This state college was established on June 10, 1983 and has a population of more than 14,000 students, 275 administrative employees, and 596 academic employees, mandated primarily to provide higher technological, professional and vocational instruction and training in fisheries, trade and technologies, arts and sciences. The main campus of Camarines Sur Polytechnic Colleges (CSPC) is located in Nabua, Camarines Sur.

2.3 Research Participants

The study's total population comprised 114 married employees, which included 83 individuals from the Academic Division and 31 from the Administrative Division who consented to participate and completed the questionnaire. Participants were selected using a purposive sampling technique. The inclusion criteria specified that respondents must be married men or women, have been married for at least one year, and be between the ages of 27 and 72. Individuals were excluded from the study if they did not answer at least 10% of the total questions on the questionnaire.

For qualitative data collection, participants were chosen through both purposive sampling and convenience sampling methods. Purposive sampling is a non-probability sampling approach where researchers use their judgment to select members of the population for participation in their surveys, while convenience sampling involves selecting respondents who are readily accessible to the researcher. A total of six participants who scored highly on the Kansas Marital Satisfaction Scale were invited for in-depth interviews until theoretical saturation was achieved; ultimately, five participants were selected for inclusion in the qualitative analysis (Hennick & Kaizer, 2022).

2.4 Research Instrument

The quantitative segment of the study is accomplished through three (3) standardized questionnaires namely: Schutte Self Report Emotional Intelligence Test (SSEIT), Adult Attachment Scale (AAS) and Kansas Marital Satisfaction Scale (KMSS) that explore the emotional intelligence, attachment style, and marital satisfaction of the chosen respondents.

Schutte Self Report Emotional Intelligence Test (SSEIT)

The Schutte Self Report Emotional Intelligence Test (SSEIT) is a tool designed to assess general Emotional Intelligence (EI) through four distinct sub-scales: emotion perception, the utilization of emotions, management of self-relevant emotions, and management of others' emotions. Developed by Salovey and Mayer in 1990, the SSEIT framework aligns closely with the EQ-I model of Emotional Intelligence. This test comprises 33 items where respondents indicate their level of agreement on a scale from 1 (strongly disagree) to 5 (strongly agree). The scores from each sub-test are calculated and summed to produce an overall score for the individual. According to Schutte and her colleagues, the reliability coefficient for this emotional intelligence scale is reported at 0.90.

Revised Adult Attachment Scale (RAAS)

The Revised Adult Attachment Scale (RAAS), created by Collins in 1996, is designed to evaluate individual variations in attachment styles. This scale consists of 18 items divided into three subscales, each containing six items: Close, Depend, and Anxiety. The Close subscale assesses how comfortable an individual is with intimacy and closeness in relationships. The Depend subscale evaluates the degree to which a person feels they can rely on others for support and availability when necessary. The Anxiety subscale measures the level of concern an individual has regarding abandonment or feeling unloved. In a study involving undergraduates (n=173), the reliability of the subscales was confirmed with Cronbach's alpha coefficients of .81 for Close, .78 for Depend, and .85 for Anxiety. The RAAS categorizes adult attachment styles into three types: *Secure*: Characterized by high scores on both Close and Depend subscales, along with a low score on Anxiety. *Anxious*: Defined by a high score on the Anxiety subscale, with moderate scores on both Close and Depend. *Avoidant*: Marked by low scores across all three subscales: Close, Depend, and Anxiety.

Kansas Marital Satisfaction Scale (KMSS)

The Kansas Marital Satisfaction Scale (KMSS) is a three-item tool specifically created to evaluate relationship satisfaction among married couples. The original measure consists of items that focus on an individual's contentment with their spouse, their marriage, and their overall marital relationship. This scale is designed to be quick and straightforward to administer and score, comprising three items that assess marital quality (Schumm, W. R., Nichols, C. W., Schectman, K. L., & Grigsby, C. C. (1983)). Participants respond to each item using a 7-point scale that ranges from 1 (extremely dissatisfied) to 7 (extremely satisfied). With a Cronbach's alpha of 0.95, the KMSS demonstrates strong reliability and validity, having been utilized in numerous studies across diverse populations to measure marital satisfaction. Conversely, the qualitative part of the study employed a phenomenological approach through in-depth interviews with married employees to gather participant responses. This involved transcribing recorded interviews and coding the data to gain deeper insights and achieve more accurate research outcomes from the qualitative responses.

2.5 Data Gathering Procedure

This study used specific steps to collect the data from target respondents. First, permission to conduct the study was sought from the institution where married couples respondents are working. Second, before conducting the research proper, the participants were provided with an informed consent form written in the language that the respondents understand, and were briefed regarding the objectives, content, and methodology of the study. Third, with the respondents permission, the researcher then conducted the data gathering through the Google drive and the link which was sent to the respondents for them to access it. Fourth, once all the respondents had answered and completed the research questionnaires, the researcher utilized the Microsoft Excel Spreadsheet for encoding and tallying of data gathered from the responses of the participants. Following this, all raw scores were manually compiled, categorized, and organized. Subsequently, these scores were analyzed statistically using Microsoft Excel with the relevant statistical tools, as well as the Statistical Package for the Social Sciences (SPSS v. 28). Lastly, after the tabulation process, a total of five (5) participants who are high scorers in Kansas Marital Satisfaction Scale were sought for an in-depth interview. This approach enabled the five (5) respondents to articulate and share their stories, offering rich descriptions of their lived experiences. Hence, transcriptions of recorded interviews from the participants were made for better insights and precise research outcomes of the qualitative responses and in order to clearly elaborate the extracted data from the respondents that will come from the follow-up questions.

2.6 Ethical Considerations

The researcher of the study adhered to the guidelines of the Code of Ethics of the Psychological Association of the Philippines (PAP) where several considerations were taken into account to comply with the ethical considerations in conducting research. The researcher involved in the study submitted her manuscript to the Research Ethics Review Committee. As stipulated in Article X, it is required for researchers to provide a consent form that is written in a language comprehensible to the participants, along with obtaining their signatures to indicate their agreement to take part in the study. Before conducting the research proper, the participants were provided with an informed consent form and were briefed regarding the objectives, content, and methodology of the study. The researcher sought permission from the respondents to record their interview responses. In this regard, their information and responses were treated with utmost confidentiality. Each respondent was inquired about their willingness to join as a respondent. No one was coerced nor obliged to take part. The research underwent a plagiarism check to ensure that concepts were accurately credited and that the authors received proper acknowledgment.

3.0 Results and Discussion

3.1 Profile of the Respondents

Table 1 indicates the frequency and percentage of the respondents' demographic profile. As to sex, 86 respondents were females and 28 were males with 75.4 % and 24.6 % of the total sample respectively. As to age, 44 respondents are aged between 27-39, 66 are aged 40-59, and 4 are aged 60-72 with 38.6%, 57.9%, and 3.5% of the total sample respectively. As to years of marriage, 44 respondents were 1-10 years married, 37 were 11-20 years, 26 were 21-30 years, 6 were 31-40 years, and 1 is 41-50 years with 38.6%, 32.5%, 22.8%, 5.3%, and 0.9% of the total sample respectively. As to employment status, 84 respondents were regular, 7 were casual, and 23 were contract of service with 73.7%, 6.1%, and 20.2% of the total sample respectively.

Table 1. Frequency and percentage distribution of the respondents' profile, n=114

	Frequency	Percentage %
Sex		
Female	86	75.4
Male	28	24.6
Age		
27-39	44	38.6
40-59	66	57.9
60-72	4	3.5
Years of marriage		
1-10 years	44	38.6
11-20 years	37	32.5
21-30 years	26	22.8
31-40 years	6	5.3
41-50 years	1	0.9
Employment Status		
Regular	84	73.7
Casual	7	
Contract of Service	23	20.2
Position		
College official	19	16.7
Faculty member	71	62.3
Administrative officer	2	1.8
Rank and File	22	19.3
Monthly Family Income		
Php 10,957 below (Poor)	2	1.8
Php 10,958- Php 21,914 (Low income, but not poor)	17	14.9
Php 21,915- Php 43,828 (Lower middle class)	49	43.0
Php 43, 829- Php 76, 699 (Middle class)	22	19.3
Php 76,700- Php 131, 484 (Upper middle income)	18	15.8
Php 131, 485 - Php 219, 140 (High income, but not rich)	5	4.4
Php 219, 141 above (Rich)	1	0.9
Division		
Academic	83	72.8
Administrative	31	27.2

As to position, 19 respondents were college officials, 71 were faculty members, 2 administrative officers, and 22 were rank and file with 16.7%, 62.3%, 1.8%, and 19.3% of the total sample respectively. As to monthly family income, 2 respondents has a family income of Php 10,957 below (poor), 17 were Php 10,958- Php 21,914 (low income, but not poor), 49 were Php 21,915- Php 43,828 (lower middle class), 22 were Php 43, 829- Php 76, 699 (middle class), 18 were Php 76,700- Php 131, 484 (upper middle income), 5 were Php 131, 485 - Php 219, 140 (high income, but not rich), and 1 is Php 219, 141 above (rich) with 1.8%, 14.9%, 43.0%, 19.3%, 15.8%, 4.4%, and 0.9% of the total sample respectively. Lastly, as to division 83 respondents were from academic and 31 from administrative with 72.8% and 27.2% of the total sample respectively.

3.2 Emotional Intelligence

Table 2 depicts the emotional intelligence of the respondents. The data reveals a weighted mean of 133.99 with a standard deviation of 12.52, signifying that respondents exhibit an average emotional intelligence in their marital life.

Table 2. Respondents' level of emotional intelligence

Sub-Scales	Mean	Standard Deviation	Rank	VI
Perception of Emotions	43.80	4.78	1	
Managing Own Emotions	20.33	2.39	3	
Managing Others Emotions	20.47	2.24	5	
Utilizing Emotion	16.85	2.35	4	
Uncategorized	32.54	3.42	2	
Overall	133.9	12.52		Average

Legend: The scores varied between 33 and 165, where higher scores reflect a greater presence of emotional intelligence (EI) characteristics (Schutte et al., 1998). The average EI score is 124; scores that fall below 111 or exceed 137 are deemed unusually low or high (Malouf, 2014).

There are four subscales of emotional intelligence namely: perception of emotions with a weighted mean of 43.80 and standard deviation of 4.78, managing own emotions with a weighted mean of 20.33 and standard deviation

of 2.39, managing others' emotions with a weighted mean of 20.47 and standard deviation of 2.24, utilizing emotion with a weighted mean of 16.85 and standard deviation of 2.35, and uncategorized with a weighted mean of 32.54 and standard deviation 3.42.

Emotional Intelligence refers to the capacity to recognize, assess, and manage one's own emotions as well as those of others. This concept was articulated by Salovey and Mayer in 1990, who emphasized the importance of being able to differentiate between various feelings and emotions and utilizing this understanding to inform one's thoughts and behaviors. EI includes four specific abilities: perceiving, using, understanding, and managing emotions. Salovey and Mayer (1990) believe that EI is made up of four basic components: a) perception, evaluation and expression of emotion; b) emotional facilitation of thinking; c) understanding and analysis of emotions, and application of emotional awareness; and d) responsive regulation of emotion to improve emotional and intellectual growth. According to this definition, the fundamental components of emotional intelligence (EI) encompass perception of emotion in oneself and others and understanding these excitements and management of emotion. Since the respondents demonstrate strong performance in this area, it indicates that they are capable of managing their own emotions as well as those of others. Furthermore, the research conducted by Abiodun et al. (2022) indicated that couples exhibited elevated levels of emotional intelligence alongside high marital satisfaction. The results of the study also demonstrated a positive correlation between emotional intelligence and marital satisfaction.

Table 3. Differences in the respondents' emotional intelligence when grouped according to profile

Variable	Perception of Emotions			Managing Own Emotions			Managing Other's Emotions			Utilizing Emotions			Uncategorized			Overall EI		
	t/F-value	p-value	I	t/F-value	p-value	I	t/F-value	p-value	I	t/F-value	p-value	I	t/F-value	p-value	I	t/F-value	p-value	I
Sex	2.72	0.00	S	1.97	0.05	N	3.58	0.00	S	-0.23	0.81	N	0.20	0.83	N	2.11	0.03	S
Age	0.44	0.64	N	0.22	0.80	N	0.48	0.61	N	1.18	0.30	N	0.09	0.91	N	0.44	0.64	N
Years of marriage	2.68	0.03	S	2.39	0.05	N	2.42	0.05	N	1.35	0.25	N	0.92	0.45	N	2.31	0.06	N
Employment status	2.63	0.07	N	1.76	0.17	N	0.84	0.43	N	2.59	0.07	N	4.61	0.01	S	3.32	0.04	S
Position	1.00	0.39	N	0.19	0.90	N	0.56	0.64	N	1.22	0.30	N	0.19	0.89	N	0.59	0.61	N
Monthly Family Income	2.70	0.01	S	2.19	0.04	N	1.11	0.35	N	0.92	0.48	N	1.90	0.08	N	1.71	0.12	N
Division	-0.35	0.72	N	0.26	0.79	N	-0.21	0.83	N	0.74	0.46	N	0.03	0.97	N	0.07	0.94	N
			S			S			S			S			S			S

The differences in the respondents' emotional intelligence can be found in Table 3 which is grouped according to their demographic profile. The findings indicate that among the demographic profile of the respondents, the only factors that significantly influence the particular subscale of emotional intelligence are the sex, years of marriage, employment status, and monthly family income. According to the research findings, the perception of emotions, managing other's emotion and overall EI has significance to the profile variable sex. The correlation between sex and EI's perception of emotions, managing other's emotion and overall EI was supported according to the study conducted by Moreira-Choez et al. (2023) noted that significant differences in perceived emotional intelligence (PEI) dimensions were evident across sex, with women generally scoring higher on emotional attention and emotional clarity, while men excelled in emotional repair. This finding underscores the notion that gender roles and societal expectations shape emotional competencies differently for men and women.

In addition, Jarsaniya (2021) also concluded that women are more capable of recognizing their own emotions as well as the emotions of others than male respondents. Moreover, Zmaczyńska-Witek et al. (2019) explored the relationship between emotional intelligence and marital communication in married couples at different phases of their marriage, with a focus on support, involvement, and depreciation. The study found out that women demonstrated significantly higher emotional intelligence and reported providing more support to their partners

compared to men. Similarly, Suri and Kochhar (2021), showed that in contrast to male participants, women indicated a stronger relationship between emotional intelligence and marital adjustment. In contrast, Mosallanezhad et al. (2023) found that male students tend to possess greater emotional intelligence whereas female students exhibit higher levels of ethical sensitivity.

Čikeš et al. (2018) investigated the role of emotional intelligence (EI), as assessed through tests and self-reports, in explaining both individual and partner evaluations of marital quality. Their findings indicated that the capacity to effectively manage one's own emotions and those of others is a crucial determinant of marital quality, as reported by both partners. Consequently, it is beneficial for society to invest in various factors that influence marital quality, including emotional intelligence. According to the research findings, the perception of emotions has significant difference to the profile variable years of marriage. Emotional intelligence remained high as years of marriage progressed but dyadic adjustment decreased with the increase in years of marriage. This implies that emotional intelligence and years of marriage play a limited role in the dyadic adjustment of married individuals (Zaidi et al., 2022)

According to the research findings, the uncategorized and overall EI has significance to the profile variable employment status. The study by Gómez-Hombrados and Extremera (2023) confirmed a correlation between employment status and both uncategorized and overall emotional intelligence (EI). It was found that unemployed individuals with higher EI exhibited greater levels of resilient coping. Furthermore, those who were both emotionally intelligent and resilient among the unemployed demonstrated increased job search activities.. Petrides et al. (2018) provide a comprehensive overview of how trait emotional intelligence (EI) influences academic performance and related factors across different educational levels, including primary, secondary, and tertiary education. Their review of existing evidence suggests that implementing research-based applications of trait EI theory within educational contexts can lead to significant and enduring benefits for both individual students and educational institutions. The study further concludes that trait EI plays a crucial role in shaping academic behaviors and outcomes. However, it is important to note that the effects of trait EI on academic performance can differ among various studies, indicating variability in its impact. Ada and Etele (2020) investigated the connection between emotional intelligence and marital satisfaction among married teachers in Anambra State. The study's results indicated a significant but low correlation between the emotional intelligence of these teachers and their levels of marital satisfaction.

Consequently, the researchers suggested that counselors involved in marital guidance should encourage married teachers to adopt practices and mindsets that enhance marital satisfaction through regular seminars and counseling sessions. In addition, Prentice et al. (2019) conducted research titled "Emotional Intelligence or Artificial Intelligence - An Employee Perspective," which found that emotional intelligence significantly influences employee retention and performance, more so than artificial emotional intelligence. This conclusion was drawn from their analysis of service employees within the hotel industry. Ahad et al. (2020) carried out research that confirmed the factors associated with emotional intelligence that affect organizational commitment among vocational college instructors in Malaysia. The findings indicated that the emotional intelligence of these teachers plays a crucial role in shaping their commitment to their institutions. The components of emotional intelligence for vocational college teachers are categorized into four areas: self-awareness, self-management, social awareness, and relationship management. Each of these components significantly impacts a teacher's dedication to the organization, demonstrating high loading factors that suggest a strong correlation with emotional intelligence. Furthermore, Darylle Hanna T. Millanes (2018) emphasizes the importance of emotional intelligence and job satisfaction in enhancing teacher effectiveness, which is vital for both teacher development and student welfare. This assertion is particularly relevant to the current study as its participants were also educators.

According to the research findings, the perception of emotions has a significant difference when compared using the profile variable of monthly family income. The correlation between monthly family and EI's perception of emotion was supported by the paper authored by Perween and Imam (2019), which revealed a significant correlation between family income and emotional intelligence. Students from higher-income families tend to exhibit better emotional intelligence compared to their counterparts from lower-income families. In addition, in the study of Pitchaiah Podila (2018) results showed that male students with low income and female students with high income show better emotional intelligence in general.

The findings of the qualitative data support fully the findings of the quantitative data. To illustrate the emergence of the Life Skills Theme, Figure 1 is presented below.

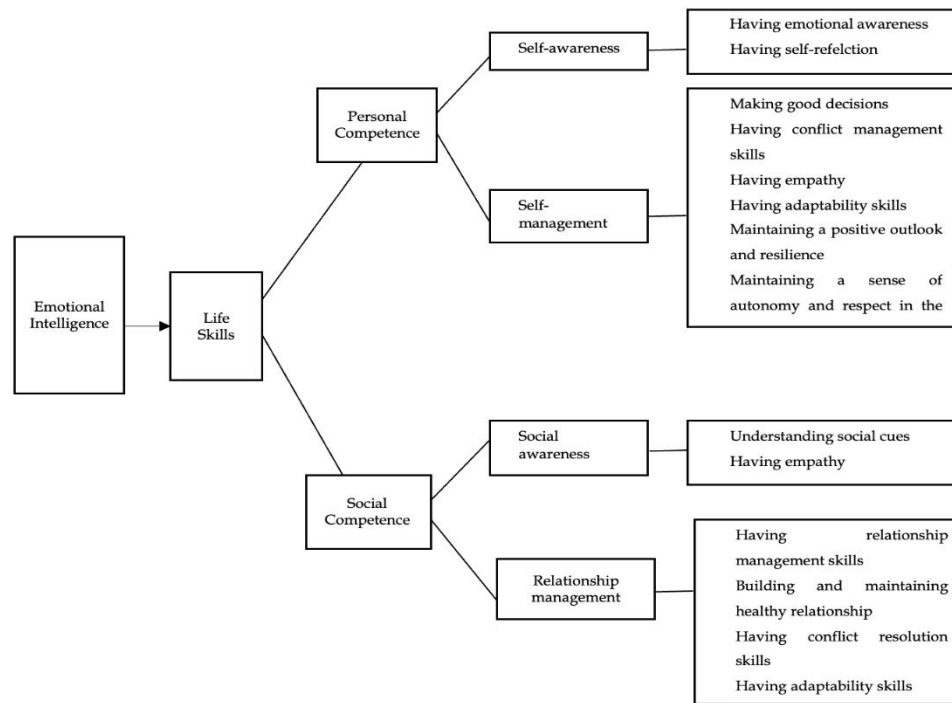


Figure 1. Emergence of the life skills theme for the aspect of emotional intelligence among participants with extremely satisfied marital satisfaction

“Life Skills” was the theme that emerged from the aspect of emotional intelligence among participants with extremely satisfied marital satisfaction which is characterized as personal competence and social competence. Bradberry (2017) describes emotional intelligence as an intangible concept that can be inherently found within each individual. He suggests that emotional intelligence influences our behavior management, our ability to handle social intricacies, and the decisions we make, aiming for favorable outcomes. Bradberry further elaborates that emotional intelligence is comprised of four core skills. Specifically, self-awareness and self-management can be categorized under personal competence, while social awareness and relationship management can be classified under social competence. Life skills are defined as the abilities that allow individuals to effectively navigate the demands and challenges of everyday life. These skills, often referred to as psychosocial skills, encompass psychological aspects and involve cognitive and behavioral processes (Davis, n.d).

Personal Competence experienced by participants with extremely satisfied marital satisfaction under the aspect of emotional intelligence can be classified in the areas of (1) self-awareness (2) self- management. The previously mentioned sub-categories were substantiated by the participants’ raw responses during the interview. Self-awareness enables us to identify when we are experiencing stress or pressure. It allows us to view situations from others’ perspectives, exercise self-control, engage in creative and productive work, and take pride in ourselves and our accomplishments, thereby fostering an overall sense of confidence and optimism (Life Skills Collaborative, 2023). Participants with extremely satisfied marital satisfaction experienced having emotional awareness and having self-reflection. Self-management refers to the ability to effectively control our emotions, thoughts, and behaviors across various situations. This encompasses several aspects, such as managing stress levels, postponing immediate rewards for long-term benefits, maintaining motivation, and establishing as well as pursuing personal, academic, and career objectives. Additionally, self-management involves efficiently organizing our time in response to current or evolving circumstances. This skill is beneficial across all areas of life and can significantly influence both employment prospects and overall life satisfaction (Life Skills Collaborative, 2023). In this subcategory, the emerging concepts emerged were: making good decisions and having conflict

management skills. In addition, there are also having empathy, having adaptability skills, maintaining a positive outlook and resilience, maintaining a sense of autonomy and respect in the relationship and having emotion regulation skills as part of self-management sub-category.

Social Competence is the another category under the life skills theme which experienced by participants with extremely satisfied marital satisfaction under the aspect of emotional intelligence can be classified in the areas of (1) social awareness (2) relationship management. Social awareness is one of the key components of emotional intelligence. It is a skill that allows us to understand how another person is feeling, empathize with them, and take a different perspective on a situation. Social awareness is a skill that we all must work to build within ourselves. In a broad sense, it means having an awareness and understanding of the world around us (Straw, 2024). Understanding social cues and having empathy are two of the emerging concepts under the sub-category social awareness. Relationship management encompasses our capacity to communicate effectively, foster positive interactions with others, engage with individuals from diverse cultural backgrounds, collaborate successfully in teams, and resolve conflicts. This aspect of emotional intelligence (EQ) is dependent on the ability to leverage the other three components of EQ to cultivate and sustain relationships effectively (Radtke, 2022). Participants with extremely satisfied marital satisfaction experienced having relationship management skills, building and maintaining healthy relationship, having conflict resolution skills, having the adaptability skills, and having an open communication are part of the relationship management sub-category. In summary, the findings of the qualitative data support fully the findings of the quantitative data.

3.3 Attachment Style

Table 4 illustrates the respondent's attachment style. The data showed the three (3) attachment style: secure, anxious, and avoidant. The data attained 3.5015 weighted mean with 0.56334 standard deviation for secure attachment style indicates that respondents have high scores on this sub- sub-scale; the attained 3.0000 with 0.58454 standard deviation for anxious attachment style and 2.3991 weighted mean with 0.62974 standard deviation for avoidant attachment style indicates that participants have an average score on this subscales, respectively.

Table 4. *Respondents' attachment style*

Sub-scales	Mean	Standard Deviation	Rank	VI
Secure	3.5015	0.56334	1	High
Anxious	3.0000	0.58454	2	Average
Avoidant	2.3991	0.62974	3	Average

Legend: *Secure- high scores on Close and Depend, low score on Anxiety*

Anxious - high score on Anxiety, moderate scored on Close and Depend

Avoidant- low scores on Close, Depend, Anxiety

Levy et al. (2018) describes attachment style as a concept that refers to an individual's typical manner of perceiving, relating to, and engaging with important figures in their life, including parents, children, and romantic partners. Research indicates that individuals who experienced neglect and physical abuse during childhood tend to develop higher levels of anxious attachment styles in their adult relationships. Additionally, childhood neglect is associated with the development of avoidant attachment styles as well. Both anxious and avoidant attachment styles in adulthood are linked to negative mental health outcomes. Specifically, these attachment styles correlate with increased anxiety and depression levels, as well as decreased self-esteem. Notably, only the anxious attachment style was found to be a predictor of elevated allostatic load, which refers to the cumulative wear and tear on the body due to chronic stress. Both anxious and avoidant attachment styles in adulthood are linked to negative mental health outcomes. Childhood neglect and physical abuse have lasting effects on adult attachment styles and anxious and avoidant adult attachment styles contribute to understanding the negative mental health consequences of childhood neglect and physical abuse 30 years later in adulthood.

These insights were derived from research conducted by Widom et al. (2018). Henschel et al. (2020) found that various attachment styles were associated with distinct challenges in emotion regulation (ER). Individuals with an anxious attachment style experienced more difficulties in ER compared to those with a secure attachment style. This was particularly evident in areas such as identifying and accepting emotions, managing impulsivity, engaging in goal-directed behaviors, and accessing effective ER strategies. Furthermore, anxious individuals reported a greater tendency towards rumination, self-blame, and catastrophizing than their secure counterparts.

Moreover, Heidari and Kumar (2021) provides valuable insights into the relationship between attachment styles and marital satisfaction among respondents. Their findings indicate that there are no significant differences in attachment styles or levels of marital satisfaction between male and female participants. This suggests that gender does not play a crucial role in how individuals experience attachment or satisfaction within their marriages.

The differences in the respondents' attachment style can be found in Table 5, which is grouped according to their demographic profile. The findings indicate that among the demographic profile of the respondents, the only factor that significantly influence the particular subscale of attachment style is the years of marriage. Results revealed that 1-10 years of marriage have highest scores. Therefore, the findings revealed that years of marriage profile produce substantial differences in avoidant attachment style.

Table 5. Differences in the respondents' on attachment style when grouped according to profile

Variable	Secure			Anxious			Avoidant		
	t/F-value	p-value	I	t/F-value	p-value	I	t/F-value	p-value	I
Sex	0.58	0.56	NS	0.81	0.41	NS	-1.63	0.10	NS
Age	0.56	0.57	NS	2.11	0.12	NS	0.13	0.87	NS
Years of Marriage	0.90	0.46	NS	0.37	0.82	NS	2.95	0.02	S
Employment Status	1.16	0.31	NS	1.26	0.28	NS	0.03	0.96	NS
Position	2.63	0.05	NS	1.82	0.14	NS	2.43	0.06	NS
Monthly Family Income	0.77	0.59	NS	1.18	0.31	NS	1.27	0.27	NS
Division	-0.61	0.53	NS	-0.74	0.45	NS	1.57	0.12	NS

According to the research findings, the avoidant attachment style has significant difference when compared using the profile variable years of marriage. Dependent attachment style is characterized by a strong need for closeness and fear of abandonment, and can negatively impact marital satisfaction and the longevity of marriages. This was supported according to Kuncewicz et al., (2020), the role of relationship length in predicting the effects of a combination of insecure attachment patterns on different aspects of relationship quality. The findings of the study revealed a different role of relationship length in explaining the respective effects of anxious-avoidant ("eroding effects") and anxious-anxious combinations ("buffering effect"), a characteristic of dependent attachment on selected aspects of relationship quality. In a longer relationships, men exhibited lower levels of satisfaction and tenderness when they displayed higher avoidance, particularly when their female partners exhibited higher anxiety. Similarly, women demonstrated less satisfaction and tenderness in longer relationships when they had higher levels of anxiety, especially when their male partners displayed higher avoidance.

The findings of the qualitative data support fully the findings of the quantitative data. To illustrate the emergence of the Relationship Perspectives Theme, Figure 2 is presented below. "Relationship Perspectives" was the theme that emerged from the aspect of attachment style among participants with extremely satisfied marital satisfaction which is characterized as positive view of the romantic partner and positive self-view. The significance of relationship perspective cannot be overstated; it plays a vital role in relationship satisfaction and stability. Research indicates that couples who engage in effective perspective-taking are better equipped to handle conflicts and support each other during challenging times (Ramezani et al., 2020). By understanding each other's perspectives, partners can respond more compassionately and appropriately, leading to healthier interactions.

Positive self-view refer to the overarching beliefs we hold about ourselves, which affirm that we are valuable and deserving individuals. For instance, you might believe that at your core, you are worthy of kindness from others and entitled to achieve success in your personal endeavors (Davis, 2023). Positive self-views experienced by participants with extremely satisfied marital satisfaction can be classified in the areas of (1) self-esteem (2) self-reflection and (3) autonomy. The previously mentioned sub-categories were substantiated by the participants' raw responses during the interview. Participants with extremely satisfied marital satisfaction are feeling securely attached, experienced being able to adjust in the relationship, being comfortable with emotional intimacy, having a strong sense of trust and experienced being able to maintain a sense of autonomy.

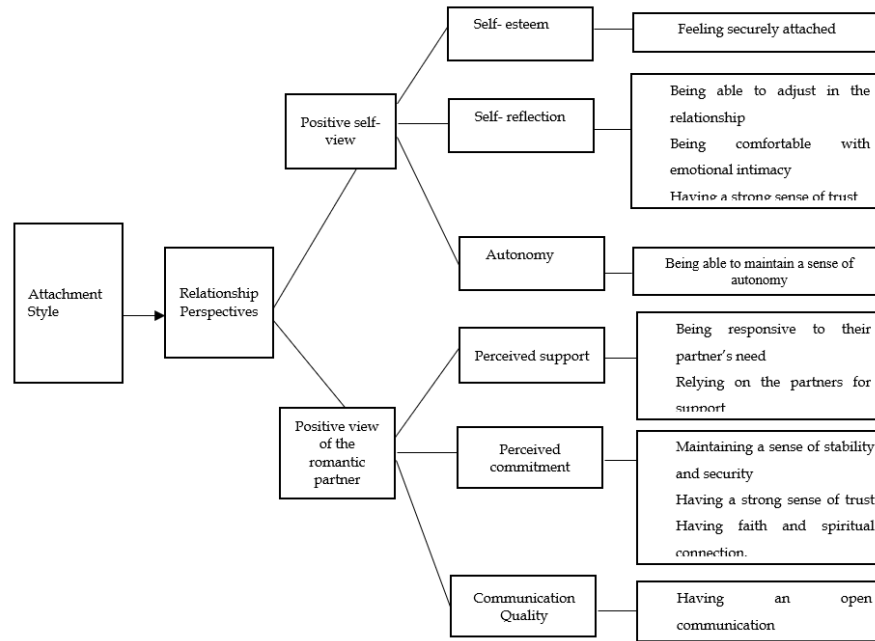


Figure 2. Emergence of the relationship perspectives theme for the aspect of attachment style among participants with extremely satisfied marital satisfaction

Positive View of the romantic partner experienced by participants with extremely satisfied marital satisfaction can be classified in the areas of (1) perceived support (2) perceived commitment and (3) communication quality. The previously mentioned sub-categories were substantiated by the participants' raw responses during the interview. Perceived support is more accurately understood as an individual's assessment of their circumstances rather than a direct indication of the actual support they receive (Eagle et al. 2018). Participants with extremely satisfied marital satisfaction experienced being responsive to their partner's need and relying on the partners for support. Perceived commitment is a crucial aspect of marital satisfaction and overall relationship quality. It refers individual's subjective perception of their partner's dedication, loyalty, and intention to maintain and strengthen the marital relationship. Participants with extremely satisfied marital satisfaction experienced maintaining a sense of stability and security, having a strong sense of trust and having faith and spiritual connection. Communication quality is essential for fostering intimacy, trust, and satisfaction within the marriage. It encompasses how well couples convey their thoughts, feelings, needs, and concerns to each other, as well as how they listen, understand, and respond to their partner's communication. Participants with extremely satisfied marital satisfaction experienced having an open communication. In summary, the findings of the qualitative data support fully the findings of the quantitative data.

3.4 Marital Satisfaction

Table 6 illustrates the respondent's marital satisfaction. The data showed the attained 17.1842 weighted mean with 4.86011 standard deviation indicates that respondents are highly satisfied with their married life.

Table 6. Respondents' marital satisfaction

KMS	Weighted Mean	Standard Deviation	Verbal Interpretation
Marital Satisfaction	17.1	4.86	High

Legend: Total score range from 3 to 21, with high scores meaning better marital quality.

Marital satisfaction refers to the extent to which individuals in a marriage evaluate their contentment with various elements of their marital relationship. This satisfaction is influenced by each partner's expectations, needs, and desires within the marriage and can vary over time throughout the course of the relationship (Ekufu & Anetoh 2022). It is one of the most significant and unique relationships among all human relationships. It is not only a mere convention, but also an implicit condition in all human society. The relationship between husband and wife is a very specific context and involves a complex process of adjustment. Marital satisfaction is closely associated

with the overall happiness of both partners, which encompasses aspects such as conflict resolution and emotional support (Hasan, 2022). Haris and Kumar (2018) states that marital satisfaction is the subjective evaluation of one's experience in their marriage. By subjective evaluation, we mean that marital satisfaction can only be rated by each person in response to the question, "How satisfied are you?" The level of a person's satisfaction cannot be determined by anyone else. Marital satisfaction is not a property of a relationship; it is a subjective experience and opinion.

Marital satisfaction is related to the happiness and enjoyment of relationships between couples and means having a favorable feeling of marriage, which can be considered a psychological situation that does not exist spontaneously. In marital relationships, several factors cause spouses to be satisfied with each other, one of which is communication patterns. Marital relationship is a process in which couples exchange feelings and thoughts verbally and non-verbally. If we pay attention to the factors of marital satisfaction, we can expect that by increasing the level of satisfaction and mental health, many psychological, emotional and social problems will be reduced (Ghaibi et al., 2022). Moreover, Vallejos (2018) found that both male and female BPO night shift workers in the Philippines reported being satisfied with their marriages. The study clearly indicated that economic and financial stability play a significant role in marital satisfaction. Additionally, the compatibility of partners' expectations within the marriage and toward each other was also shown to influence their marital satisfaction.

Table 7. *Difference in the respondents' marital satisfaction when grouped according to profile, n=114*

Variable	t/F-value	p-value	Interpretation
Sex	-3.83	0.00	Significant
Age	2.04	0.13	Not Significant
Years of Marriage	1.75	0.14	Not Significant
Employment Status	0.00	0.99	Not Significant
Position	1.47	0.22	Not Significant
Monthly Family Income	2.04	0.06	Not Significant
Division	-0.31	0.75	Not Significant

At 5% significance level, only SEX has an effect on marital satisfaction

The differences in the respondents' marital satisfaction can be found in Table 7, which is grouped according to their demographic profile. The findings indicate that among the demographic profile of the respondents, the only factors that significantly influence the particular subscale of marital satisfaction is sex, whereas females have higher marital satisfaction than males. The findings revealed that sex profile produce substantial differences in marital satisfaction. According to the research findings, the marital satisfaction has significant difference when compared using the profile variable sex. The significant difference between marital satisfaction and sex was supported according to Bahrami et al., (2021). According to their findings, gender was significantly associated with marital satisfaction, as such, the level of marital satisfaction was higher in men than in women. One significant implication of higher marital satisfaction in men relates to psychological well-being. For instance, Allen et al. (2018) found that higher levels of marital satisfaction in male service members were significantly associated with lower levels of depression, anxiety, and post-traumatic stress disorder (PTSD). This relationship indicates that satisfied married men not only report better mental health but also exhibit resilience against the stresses associated with military life, thereby showcasing the multifaceted benefits of a supportive marital environment.

In contrast, the relationship between marital satisfaction and depression appears to be more pronounced among women, as they often bear the emotional burden of dissatisfaction. Research conducted by Yang et al. (2023) highlighted that the negative correlation between marital satisfaction and self-rated depression was markedly stronger for women than for men. This disparity suggests that women bear a disproportionate emotional burden when marital satisfaction declines, leading to increased vulnerability to mental health issues such as depression and anxiety. In addition, according to the study of Hwang, et al., (2024) male retirees reported higher satisfaction than non-retired men, female retiree responses revealed lower satisfaction than non-retired women. Furthermore, these trends were consistent regardless of the time elapsed after retirement

To illustrate the emergence of shared values theme among participants with extremely satisfied marital satisfaction, Figure 3 is presented below.

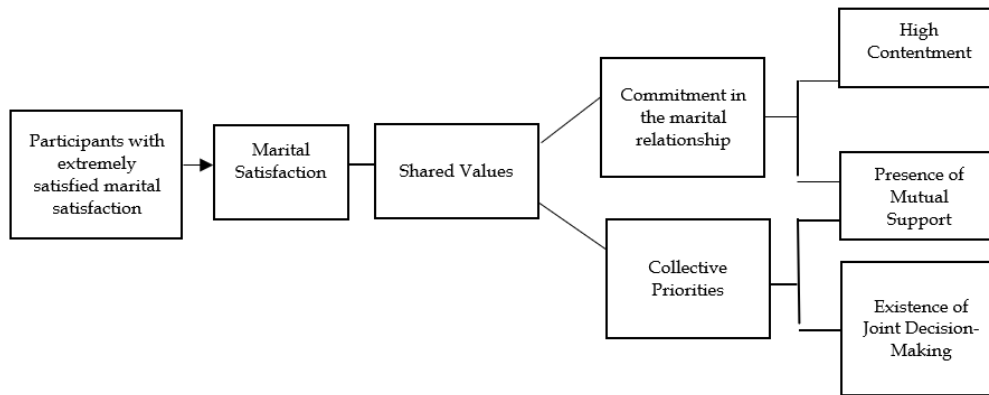


Figure 3. Emergence of the shared values theme among participants with extremely satisfied marital satisfaction

“Shared values” was the theme emerged among participants with extremely satisfied marital satisfaction. Sharing core values is vital to a healthy long-term relationship. Without them, life together can begin to degrade, and friction may become unavoidable. Shared values can also affect the dynamic between a couple. Because you have morals and principles in common, it creates an atmosphere where you can count on a partner’s understanding (Miles, 2019). The alignment of these values is critical, as discrepancies may lead to conflicts and dissatisfaction in the relationship. The presence of shared values fosters a sense of belonging and understanding, which is crucial for maintaining a healthy marital bond. Commitment in the marital relationship by participants with extremely satisfied marital satisfaction can be classified in the areas of (1) high contentment and (2) presence of support. The above-mentioned sub-categories were supported by the raw answers of the participants during the interview. High contentment is a long lasting feeling accompanied by peacefulness, gratitude and satisfaction. Participants with extremely satisfied marital satisfaction experienced building and sustaining the relationship, having emotional commitment, and having covenantal perspective. The presence of mutual support in marital relationship entails both individuals actively supporting and being supported by each other in various aspects of their lives. Participants with extremely satisfied marital satisfaction experienced having commitment to individual growth and development, having commitment to relational maintenance, and having shared responsibility.

Collective priorities experienced by participants with extremely satisfied marital satisfaction can be classified in the areas of (1) existence of joint decision-making and (2) presence of mutual support. The previously mentioned sub-categories were substantiated by the participants’ raw responses during the interview. Joint decision-making in a marital relationship involves both partners actively participating in the process of making decisions that affect their lives together. It emphasizes collaboration, mutual respect, and shared responsibility in determining the course of action for various aspects of their relationship. Participants with extremely satisfied marital satisfaction experienced having commitment to growth and improvement, having shared values and goals, and prioritizing open, honest, and effective communication. In summary, the findings of the qualitative data support fully the findings of the quantitative data.

Table 8 indicates the correlational matrix of the variables of the study. Based on the correlational matrix, the secure attachment style has a significant correlation with several components of emotional intelligence, namely perception of emotions ($p < 0.003$), managing others’ emotions ($p < 0.046$), and the uncategorized component ($p < 0.001$). Thus, the secure attachment style has a weak, positive relationship with the aforementioned components of emotional intelligence. Furthermore, the secure attachment style has a significant correlation with emotional intelligence ($p < 0.011$), and the Pearson coefficient of $r = 0.238$ implies a weak positive correlation as well. This implies that the secure attachment style also has a weak, positive relationship with overall emotional intelligence. On the other hand, the anxious attachment style has no significant correlation with emotional intelligence or any of its components, as all p -values are greater than the predetermined significance level ($p > 0.05$).

Table 8. *Correlational matrix of the variables of the study*

Variable		Attachment Style									Marital Satisfaction		
		Secure			Anxious			Avoidant			r_{xy}		
		r_{xy}	p-value	I	r_{xy}	p-value	I	r_{xy}	p-value	I	r_{xy}	p-value	I
Emotional Intelligence	Perception of Emotions	.272**	0.003		0.049	0.605		-.284**	0.002		0.054	0.566	
	Managing Own Emotions	0.061	0.519		-0.107	0.258		-.188*	0.045		0.130	0.167	
	Managing Others' Emotions	.187*	0.046		0.066	0.486		-0.158	0.094		-0.003	0.971	
	Utilizing Emotion	0.040	0.674		-0.116	0.217		-0.107	0.258		0.075	0.428	
	Uncategorized	.350**	0.000		0.084	0.374		-.405**	0.000		0.095	0.312	
	Emotional Intelligence	.238*	0.011		0.030	0.751		-.279**	0.003		0.078	0.415	
	Overall												
	Marital Satisfaction	0.060	0.526		0.042	0.656		-0.144	0.126				

** . Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Meanwhile, the avoidant attachment style has a significant correlation with almost every component of emotional intelligence except for utilizing emotion ($p < 0.258$). Each of these correlations has a Pearson coefficient within the range indicating a weak, positive, significant correlation, indicating that the avoidant attachment style has a positive, albeit weak, relationship with perception of emotions $r = -.284$, ($p < 0.002$), managing one's own emotions $r = -.188$, $p < 0.045$ managing others' emotions, $r = -0.158$, $p < 0.094$ and the uncategorized component $r = .405$, ($p < 0.000$). Overall, the avoidant attachment style has a significant correlation with emotional intelligence as a whole ($p > 0.003$), with a Pearson coefficient of $r = 0.279$ indicating a weak positive relationship between the two variables.

Attachment styles are shaped during childhood through emotional experiences, influenced by traits related to emotions such as how children interpret and regulate their own and others' emotions. These emotion-related traits are integral to various emotional intelligence (EI) models, suggesting a potential link between EI and attachment styles. Walker et al. (2022) explored the moderation effect of EI type by comparing ability EI with EI rating scales through subgroup analysis and meta regression. The results indicate a significant association between lower anxious attachment and both EI rating scales and ability EI. Similarly, lower avoidant attachment is significantly correlated with both EI rating scales and ability, while secure attachment is significantly associated with EI rating scales only. The association between EI and avoidant attachment is significantly moderated by EI type. In their discussion, they explore potential mechanisms through which EI might influence the early development of attachment styles, and vice versa. It is important to note that the causal direction underlying the associations between EI and attachment styles remains unclear. Finally, it can be observed in the correlational matrix that marital satisfaction has no significant correlation with any components of emotional intelligence or any attachment styles considered, since all p-values are greater than predetermined significance level ($p > 0.05$).

In conclusion, the secure and avoidant adult attachment styles have been shown to have a weak positive correlation with emotional intelligence and some of its components. However, the anxious attachment style has no such correlation to the overall emotional intelligence. Lastly, there is no significant correlation connecting either emotional intelligence or attachment style to marital satisfaction, implying that these are not good predictors of marital satisfaction for the respondents in consideration.

Figure 4 presents the qualitative framework for Emotional Intelligence, Attachment Style, and Marital Satisfaction among Participants with Extremely Satisfied Marital Satisfaction. In the first variable, which is the emotional intelligence, the theme life skills has emerged which was classified as personal and social competence. In terms of the second variable, the attachment style has a theme of relationship perspectives and under it is the positive self-view and positive view of the romantic partner. Meanwhile, in the marital satisfaction, which is the third

variable, the theme shared values was emerged and then followed by the category marital commitment and collective priorities.

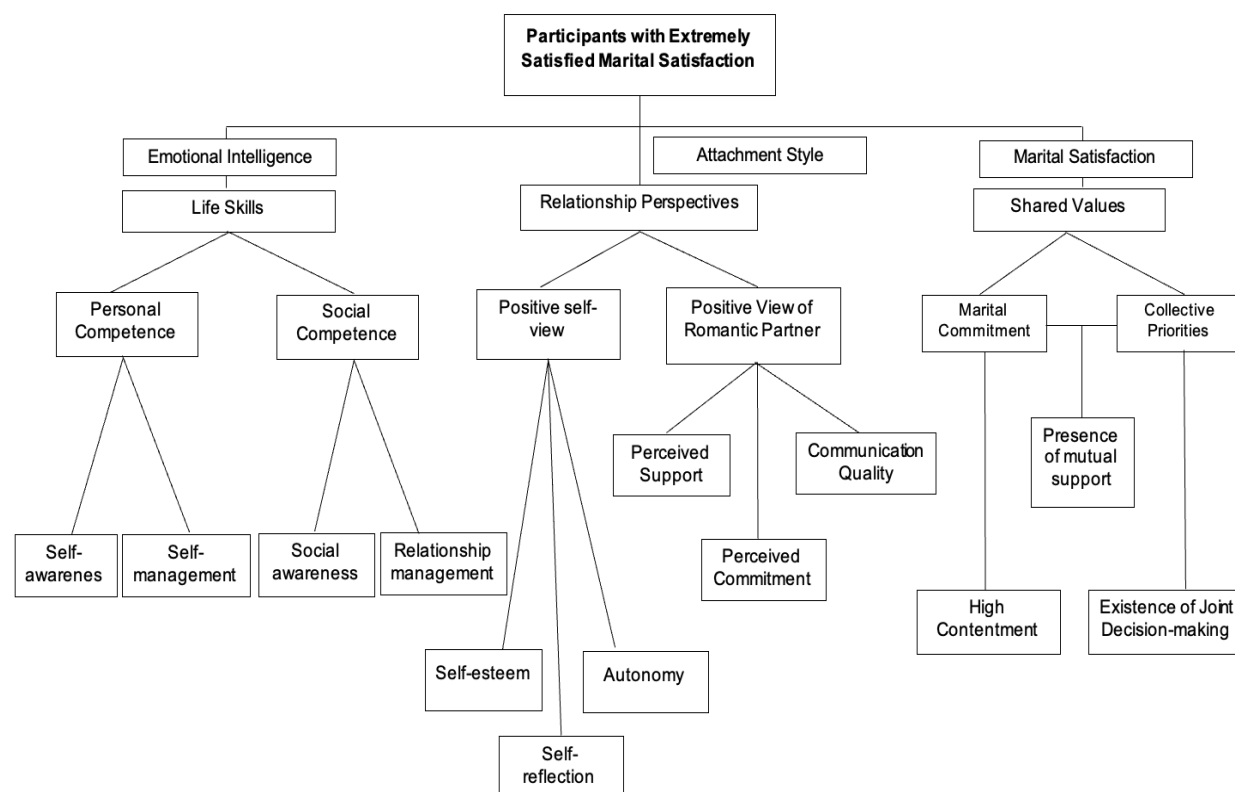


Figure 4. Framework for emotional intelligence, attachment style, and marital satisfaction among participants with extremely satisfied marital satisfaction

Table 9 presents the proposed Marriage Mentoring Program as well as a psychological intervention program based on the results of the study. The researcher came up with the findings that the psychological intervention program must be centered on the improving emotional intelligence and attachment style through the different dimensions of emotionally focused therapy approach, attachment based therapy approach, and positive psychology. A marriage mentoring program is a structured and supportive initiative designed to provide guidance, support, and resources to couples at various stages of their marital journey. According to Psychology Today (n.d.), Emotionally Focused Therapy (EFT) is a brief therapeutic approach designed to enhance romantic relationships by reigniting the emotional and physical connection that may be compromised by disappointment and distance within a partner, a common scenario in distressed couples. This form of therapy prioritizes emotional experiences and reactions, placing them at the forefront of the therapeutic process. Grounded in attachment theory, EFT underscores the significance of interpersonal connections as a source of comfort, safety, and a pathway for personal growth. These connections can manifest in real-life partners with whom one may be feeling disconnected, in internalized mental representations of significant figures, or even within different facets of oneself. Research indicates that emotionally focused couple therapy, which is based on the adult attachment perspective, has been reported to be one of the most successful and substantiated approaches to restoring harmony in intimate relationships and significantly enhancing marital satisfaction (Beasley & Ager, 2019).

Attachment-based psychotherapy (not to be confused with Attachment Therapy as described by its originator John Bowlby (1988). Attachment-based therapy is a concise and process-oriented counseling method. The foundation of the client-therapist relationship lies in the cultivation or restoration of trust, emphasizing the open expression of emotions. This therapeutic approach examines the correlation between an infant's initial attachment experiences, typically with parents as primary caregivers, and the individual's capacity to undergo healthy emotional and physical relationship development in adulthood (Psychology Today, n.d.). Positive psychology is a branch of psychology focused on the character strengths and behaviors that allow individuals to build a life of

meaning and purpose—to move beyond surviving to flourishing. Practices associated with positive psychology such as gratitude interventions can boost social and emotional well-being, studies suggest. Positive psychology has also led to explorations of how developing certain character strengths, positive emotions like awe, and other qualities, such a sense of meaning and purpose in life, might contribute to positive life outcomes. (Psychology Today, n.d).

Table 9. *Proposed marriage mentoring program*

Key Results Area	Program/ Services	Objectives	Strategies/ Activities	Target Person	Persons Responsible	Evaluation
Average Emotional Intelligence	Emotion-focused therapy (EFT) approach	To conduct emotional intelligence assessments and establish goals for improving emotional intelligence and enhancing marital satisfaction To cultivate empathy and develop social awareness by practicing active listening and understanding non-verbal cues To focus on assertive communication and expressing emotions constructively To facilitate exercises to strengthen emotional bonds between partners	1. Emotionally Focused Conversation 2. Sculpting Exercises 3. Creating Emotional Maps	Those married individuals/ couples with average emotional intelligence.	Psychologist (RPsy), Guidance Counselor (RGC), Mental Health Practitioners	Success therapeutic indicators: 1. Increased Emotional Awareness 2. Enhanced Empathy and Understanding 3. Improved Communication Skills 4. Development of Emotional Regulation Strategies
High in secure attachment style Average in anxious attachment style Average in avoidant attachment style	Attachment-based therapy	1. To conduct attachment style assessments to help participants understand their own attachment styles. 2. To teach strategies for managing anxiety and expressing needs without overwhelming the partner 3. To provide tools for creating a secure emotional base within the relationship 4. To develop exercises to build trust and increase reassurance between partners	1.Attachment-Focused Imagery 2. Attachment-Focused Journaling 3. Attachment Dialogue	Those married individuals/couples who has high secure attachment style and average in anxious and avoidant attachment styles.	Psychologist (RPsy), Guidance Counselor (RGC), Mental Health Practitioners	Success therapeutic indicators: Increased awareness on attachment style Improved communication skills Increased emotional regulation Building and Reuilding Trust
High marital satisfaction	Positive Psychology	1. To encourage couples to regularly express appreciation and gratitude towards each other, fostering a culture	1. Gratitude Practice 2. Mindfulness Meditation 3. Positive Communication Exercises	Those married individuals/couples who has high marital satisfaction	Psychologist (RPsy), Guidance Counselor (RGC), Mental	Success therapeutic indicators: 1. Practiced gratitude towards each other

		of positivity and acknowledgment of each other's positive qualities and actions. 2. To teach couples mindfulness techniques to enhance present-moment awareness, acceptance, and non-judgmental observation of their thoughts, feelings, and interactions with each other. 3. To help couples identify and enhance their individual and collective strengths to enhance communication and connection within their relationship.			Health Practitioners	2. Enhanced present moment awareness 3. Fostered Positive Interaction Patterns.

4.0 Conclusion

The findings indicate a need to reassess current theories that connect emotional intelligence and attachment styles directly to marital satisfaction. The absence of significant correlations suggests that these factors may not always be dependable predictors. This highlights the necessity for further research to investigate other elements that could affect marital satisfaction, such as communication styles, conflict resolution methods, or external pressures. For practitioners working with couples, the results suggest that concentrating solely on improving emotional intelligence or addressing attachment styles might not enhance marital satisfaction. Instead, interventions should adopt a more comprehensive approach that takes into account relationship dynamics and individual mental health. A Marriage Mentoring Program: A psychological based intervention would help married couples to enhance emotional intelligence, have a more close and secure bond and cultivate strong and fulfilling marital relationship, such as Emotionally Focused Therapy, Attachment Based Therapy and Positive Psychology approach.

5.0 Contributions of Authors

The first author contributes significantly as a researcher through conception of ideas, designing methodologies, conducting analyses, writing drafts of manuscripts, and revising them based on feedback. The second author serves as an adviser who guides conception and design phases while also providing critical input during analysis, writing, and revision stages to ensure academic rigor. The authors indicate equal contribution to each section. The authors reviewed and approved the final work.

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7.0 Conflict of Interests

The authors declare no conflicts of interest about the publication of this paper.

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Leadership Behavior of Local Leaders in Cavite's COVID-19 Vaccination Program

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Abstract. In response to the COVID-19 immunization campaign on-site, this research investigated the leadership behaviors of health officials from Bacoar, Dasmariñas, and Tagaytay. From September 2021 to February 2022, seven health officials were interviewed using a qualitative descriptive case study methodology. Their task-, relations-, and change-oriented behaviors were examined using the Hierarchical Taxonomy of Leadership Behavior paradigm. In-depth interviews were used to gather data, transcribed, and subjected to axial, in-vivo, and open coding methods for analysis. The findings showed that schedule preparation, rule clarification, subordinate supervision, and proactive issue-solving were all significant examples of task-oriented activities. Although a lack of appreciation for coworkers' efforts was seen, relations-oriented actions included resolving disputes, fostering subordinates' problem-solving skills, and consulting colleagues. Coordination with other local government units (LGUs), creative problem-solving, and motivating subordinates to learn from setbacks were all examples of change-oriented practices. Electronic communication technologies were often used to carry out leadership behaviors, exhibiting flexibility in problem-solving. After difficulties were resolved, health officers reported feeling relieved and having a greater awareness of their strengths and shortcomings. Vaccinees' unfavorable attitudes, however, were shown to have an impact on how they solved problems, highlighting the need for open communication and strict adherence to health center policies. The research emphasizes the need for local health offices to establish recognition programs to recognize the accomplishments of health officers and strengthen their interpersonal ties. Additionally, vaccine orientation before site visits may help improve the overall effectiveness of vaccination programs by minimizing misunderstandings and unfavorable attitudes. This study advances our knowledge of leadership dynamics in health emergencies and emphasizes the vital role that good leadership behaviors play in overcoming public health crises.

Keywords: City health offices; COVID-19 vaccination program response; Health officers; Hierarchical taxonomy of leadership behavior; Leadership behavior; Qualitative case study; Vaccinees' behavior.

1.0 Introduction

Transparency is paramount for leaders during crises. It involves openness and honesty, keeping teams engaged, freely sharing knowledge, and fostering open communication within organizations (Edmondson, 2020). Recognized as one of the most powerful leadership qualities, transparency is crucial in building trust and guiding effective decision-making. This study investigates leadership behaviors during the COVID-19 vaccination program, emphasizing transparency as a key dimension. The dengue vaccine controversy in the Philippines in

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2016 underscores the consequences of a lack of transparency, providing valuable lessons for addressing the COVID-19 pandemic (Lasco & Yu, 2021). This controversy, marked by negative media coverage and public distrust in vaccine safety, eroded confidence in immunizations and caused delays in children's vaccinations (Fatima & Syed, 2018). Similar challenges arose during the COVID-19 vaccination campaign, where House Bill 9252, the 'Mandatory COVID-19 Immunization Act of 2021,' raised public concerns about compulsory vaccination and government readiness to mitigate uncertainties (Cardenas, 2021). These events highlight the critical role of transparent leadership in navigating public health crises.

During the COVID-19 pandemic, research documented various leadership styles that emerged across sectors. For instance, virtual leadership in businesses (Thambusamy & Bekiroğulları, 2020), strategic planning in universities (Francisco & Nuqui, 2020), and risk-taking approaches in religious institutions (Covarrubias et al., 2021) showcased adaptive responses to unprecedented challenges. Urgent-driven protocols and restorative practices in healthcare led to successful crisis management (Zorn et al., 2020; Vrontis et al., 2021). Gender studies indicated that women leaders were more effective in crisis settings (Coscieme et al., 2020), while decision-making and adaptive leadership were key to overcoming challenges (Sriharan et al., 2022). Furthermore, public trust was identified as a critical factor in promoting vaccine acceptance (Volpp et al., 2020), with government policies playing a pivotal role in shaping public cooperation (Piraveenan et al., 2021).

Despite these insights, limited research exists on leadership behavior, specifically during on-site COVID-19 vaccination programs. While studies have examined leadership strategies in hospitals, clinics, and public health systems, a notable gap exists in understanding how leaders navigated operational and trust-building challenges at vaccination sites. Few studies have reflected on the external factors influencing leaders' behavior in these contexts or explored the nuanced demands of vaccination program leadership during its early stages. This study addresses these gaps by analyzing the behavior of leaders at COVID-19 vaccination sites, focusing on how they embodied transparency, navigated operational challenges, and built trust among stakeholders. This research aims to contribute to the growing literature on leadership during public health crises by examining leadership approaches and factors influencing decision-making. It provides insights into how transparent leadership can address emerging challenges in vaccination campaigns, fostering trust and collaboration in future health emergencies.

2.0 Methodology

2.1 Research Design

This study utilized the qualitative descriptive case study design, which allows for an in-depth exploration of an individual or a small group of participants. The conclusions drawn from this study are specific to that particular person or group and the unique environment in which they are situated. In the context of this research, the focus is on a small group of participants, namely the health officers and health worker staff within each city of Cavite, as part of the City Health Office. Specifically, the study emphasizes the individual accounts of the health officers. The philosophical underpinning of interpretivism is adopted to guide this research approach, aligning with the qualitative descriptive case study methodology.

2.2 Research Participants

The study, conducted from November 2022 to February 2023 involved interviews with participants from three COVID-19 vaccination sites in Cavite: SM Dasmariñas (2nd level, Cinema Lobby, 4114 Governor's Dr, Brgy. Dasmariñas, Cavite), Bacoar City Health Office (Bacoar Boulevard, Brgy. Bayanan, 4102 Bacoar, Cavite), and Tagaytay International Convention Center (3WWQ+J58, Kaybagal South, Tagaytay, Cavite). These sites represented diverse topographies: Bacoar (lowlands), Dasmariñas (highlands), and Tagaytay (upland). Participants included two groups: health officers (City Health Officers and team leaders) and health worker staff. Bacoar and Dasmariñas had two health officer participants, while Tagaytay had three. Two health worker staff members were also interviewed to validate the responses of the health officers. All participants must have worked at the vaccination site for at least four months, ensuring they had ample experience observing leadership behavior.

2.3 Research Instruments

The study utilized a structured interview guide as the primary research instrument, developed based on Gary Yukl's Hierarchical Taxonomy of Leadership Behaviors (2012). As illustrated in Figure 1, this framework provided

the foundation for analyzing and classifying the leadership behaviors of health officers during the COVID-19 vaccination program. The interview guide focused on three key categories of leadership behaviors – task-oriented, relations-oriented, and change-oriented—and their impact on team performance and problem-solving. This instrument was designed to capture the factors influencing leadership behaviors and the rationale behind the officers’ actions, ensuring alignment with the theoretical frameworks.

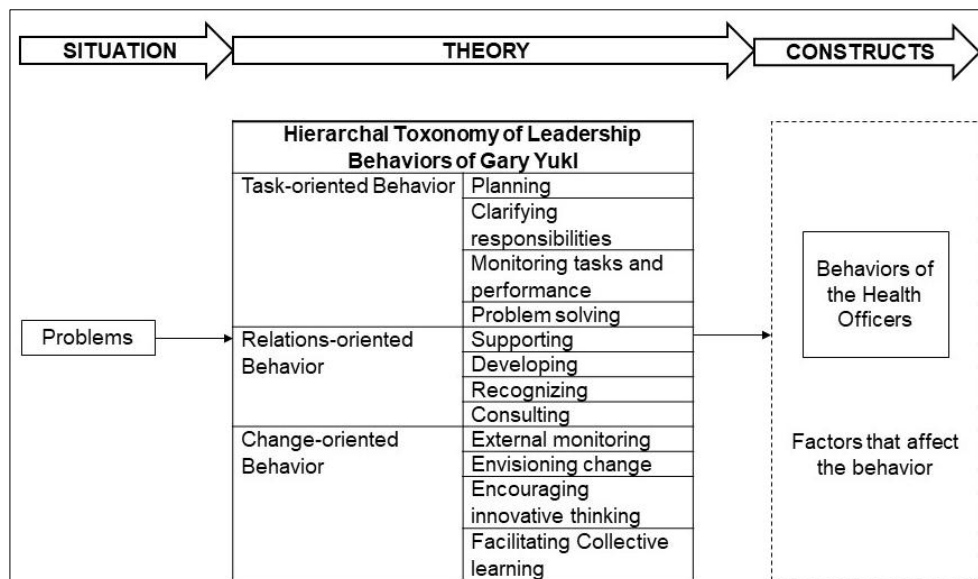


Figure 1. Theoretical framework of the study

2.4 Data Gathering Procedure

An in-depth interview was conducted using a structured guide and follow-up questions. Separate structured guide interviews were used for health officers and health worker staff. The interviews were conducted face-to-face, and audio recordings were made to ensure accurate documentation.

2.5 Data Analysis

To ensure a structured presentation of the participants' demographic profiles, an **attribute coding** technique was employed. This technique helped categorize and organize the descriptive data related to the participants' backgrounds (Patel, 2014). A clean, verbatim transcription of the recorded audio interviews was used to analyze the data. The transcription was slightly modified to ensure readability. In the first analysis phase, **open coding** was applied to break down the transcripts into codes, categorizing leadership behaviors and other constructs (Mills, 2010). Afterward, two primary coding methods were used to analyze the interview data: **descriptive coding** and **in-vivo coding**. Descriptive coding summarizes the passage's topic in a word or noun based on the researcher's interpretation and language. At the same time, in-vivo coding uses a short phrase or word from the actual language found in the passage (Patel, 2014). After unfolding the constructs, the second phase employed **axial coding**. This coding draws connections between the codes from the open coding, where the data is broken into discrete parts (Mills, 2010). Thus, axial coding helped generate data themes representing significant patterns related to the research questions. Afterward, thematic data analysis was used to identify recurring patterns and themes to determine the leadership behavior of the health officers, using the Hierarchical Taxonomy of Leadership Behavior.

2.6 Ethical Considerations

The study involved human participants, making obtaining ethical approval in line with human research guidelines essential. Permission to conduct the study was secured from the thesis coordinator before data collection began. Participants, including leaders and health workers, provided informed consent before their interviews. Several key principles were followed to ensure ethical compliance with the UNESCO Code of Conduct and Ethical Guidelines. Participants' rights to self-determination, anonymity, confidentiality, and informed consent were fully respected. They were informed of their right to freely agree, decline, or withdraw from the

study at any time without any repercussions. Care was taken to avoid discriminatory, offensive, or inappropriate language in the questionnaires and interview questions.

Throughout the study, participants' anonymity and confidentiality were strictly maintained. The researcher upheld scientific integrity by accurately recording participants' responses and avoiding data manipulation. Objectivity was maintained during data analysis to prevent bias. To enhance the generalizability of the study's findings, the research included a detailed description of the health workers' leadership behavior, providing a comprehensive account of their field experiences.

3.0 Results and Discussion

3.1 Demographic Profile of Health Officers

The study included health officers and health worker staff from three selected cities in Cavite. Table 1 summarizes the demographic profile of the health officers.

Table 1. *Summary of the demographic profile of health officers*

Health Officer							
Case Study	1-Tagaytay City			2-Dasmariñas City		3-Bacoor City	
Reference ID	T-HO1	T-HO2	T-HO3	D-HO1	D-HO2	B-HO1	B-HO2
Age	37 y/o	32 y/o	31 y/o	33 y/o	33 y/o	50 y/o	N/A
Sex	M	M	F	F	F	F	F
Marital status	S	S	M	M	S	M	S
Highest education attainment	BA	BA	PGDip	M.D.	BA	BA	BA
Length of service	1 yr. and 8 mos.	1 yr. and 8 mos.	1 yr. and 8 mos.	1 yr. and 2 mos.	1 yr. and 5 mos.	2 yrs.	2 yrs.
Job title/ position	Nurse III/ Supp.	Nurse II/ Team Leader	Nurse II/ Team Leader	Medical Officer III/ M.D. in Charge	COVAX Supp.	Nurse 3/ Team Leader	Nurse 1/ Team Leader
Employment Status	REG.	CONTR.	CONTR.	JO	CONTR.	PERM.	PERM.
*M- Male	*BA- Bachelor's Degree		*REG.- Regular		*PGDip- Postgraduate Diploma		
*F- Female	*M.D.- Doctor of Medicine		*CONTR.- Contractual		*PERM.-Permanent		

In terms of age, the majority of health officers were in their 30s. In Case 1, their ages ranged from 31 to 37 years old, while in Case 2, all health officers were 33 years old. In Case 3, one health officer was 50 years old. Regarding gender, the majority were female. Case 1 included two males and one female, whereas in Cases 2 and 3, all health officers were female. Marital status varied, with a mix of married and single individuals. In Case 1, one officer was married, while two were single. In Case 2, one officer was married and the other was single. Similarly, in Case 3, one health officer was married and the other was single.

In terms of educational attainment, most health officers held a bachelor's degree. In Case 1, two officers had bachelor's degrees, while one had a postgraduate qualification. In Case 2, one officer held a Doctor of Medicine degree, while the other had a bachelor's degree. In Case 3, both officers were bachelor's degree holders. Job positions were primarily leadership roles, with most serving as team leaders or supervisors. In Case 1, two officers were team leaders, while one held the position of Nurse III and acted as a supervisor. In Case 2, one officer, a Medical Officer III, was the doctor in charge, while the other was the COVAX Supervisor. In Case 3, both officers held team leader roles, with one also managing logistics. The length of service for health officers ranged from 1 year and 2 months to 2 years. All three officers in Case 1 had 1 year and 8 months of experience. In Case 2, both had over a year of service, while in Case 3, both officers had served for 2 years.

In terms of specific roles, Case 1 (Tagaytay) included three health officers: T-HO1, T-HO2, and T-HO3. T-HO1, a Nurse III, acted as the supervisor for the team leaders, while T-HO2 and T-HO3 were team leaders responsible for leading 20 vaccination teams. Case 2 (Dasmariñas) had two health officers: D-HO1, a Medical Officer III and the doctor in charge, and D-HO2, the site supervisor overseeing all vaccination teams. Case 3 (Bacoor) also involved two health officers: B-HO1 and B-HO2, both of whom were team leaders. Additionally, B-HO1 managed logistics for the vaccination program. Overall, the majority of health officers in this study held leadership roles as team leaders and supervisors, playing crucial roles in managing teams and ensuring the smooth implementation of the vaccination program at their respective sites.

3.2 Themes

Theme 1: Similarities Among the Behavior of Health Officers Under Task-Oriented Behavior

Table 2 presents significant statements on health officers' leadership behavior under the task-oriented behavior theme.

Table 2. *Similar open codes with significant statements for leadership behavior of health officers under task-oriented behavior*

Sub-Category	Case	Similar Codes	ID	Significant Statements
Planning	1	Scheduling activities	T-HO1	"Suppose we already placed 10 vaccinations, 10 screeners, and 15 vaccinators in the vaccination area. If there is a long queue in the screening area, we reduce the number of vaccinators and transfer 5 of them to the screening area to alleviate the queue."
	2	Assigning Schedule	D-HO2	"In the division of tasks, there are instances where we encounter shortages in vaccinators due to emergencies, illnesses, or quarantine situations. However, we have contingency plans to address these situations by having replacements available."
	3	Scheduling	B-HO2	"We have a scheduling system in place where we are informed about our assigned locations for a particular day."
Clarifying responsibilities	1	Equipping the colleagues of guidelines under the Department of Health (DOH)	T-HO3	"Aside from lecturing them, we also equip ourselves with the guidelines issued by the DOH."
	2	Explaining relevant rules to subordinates	D-HO1	"By engaging in regular communication with our marshals, we have devised such a method. Their job has become easier because we have established rules and strategies to follow."
	3	Explaining any relevant rules, policies, and standard procedures	B-HO1	"I relay all the necessary information to them, starting from the screener up to the post-monitoring team..., so they know what needs to be done."
Monitoring tasks and performance	1	Directly observing activities	T-HO2	"The first few weeks/months of vaccination are crucial because that is where you test the waters, meaning that is where you see the approach of your strategy. COVID vaccination requires new things to be done, and in that team, there are augmented members... However, because they are new, you need to orient them. Sometimes, they do not know or get confused, so you need to supervise them. However, eventually, after some time, they become familiar, and things become okay."
	2	Directly observing activities	D-HO1	"Initially, they had their strategy, and I observed it for the past few weeks. However, whenever I noticed something problematic in their marshaling approach, I would suggest, 'It might be better if we add a security guard to ensure a more organized queue and help people know where to line up.'"
	3	Observing activities of subordinates on opening vials	B-HO1	"Make sure they understand that the vaccines should not be wasted. The allocations should align with the number of vaccine recipients to ensure no discrepancy."
Problem-solving	1	Solving problems with their solutions	T-HO1	"If there are complaints, first and foremost, we investigate the complaints, the root causes, who the individuals involved are, and why they are complaining about a specific aspect. Is it about scheduling, registration, counseling?... Then, we will try to resolve them as much as possible within our current capabilities."
	2	Take immediate solution	D-HO1	"As much as possible, we try to address and solve issues at our level. However, suppose the problem falls under the local government unit's (LGU) responsibility or is related to the overall COVID response, such as concerns about the type of vaccine or other similar matters. In that case, I immediately bring it up to the higher authorities."
	3	Remaining calm to avoid adverse effects	B-HO2	"Through my response, I remain calm and refrain from engaging with them... Instead, I focus more on providing solutions to the situation."

Planning. Assigning schedules, especially for double-taskers, was implemented to facilitate a faster vaccination flow. Health officers addressed the issue of staff shortages by assigning personnel to perform dual roles. For example, if there were a lengthy queue in the screening area but a shorter one in the vaccination area, health officers would temporarily transfer staff from the vaccination area to assist in the screening area, reducing the queue of vaccinees. The staff would return to the vaccination area once the screening area had fewer people waiting.

Clarifying responsibilities. Ensuring clear communication, health officers took the time to explain relevant rules and guidelines to their subordinates. This practice was particularly evident in participants' statements in cases 1 and 2. By providing their colleagues with guidance based on the Department of Health (DOH) protocols, health officers effectively equipped their subordinates to handle conflicts between them and vaccinees. Additionally, health officers consistently updated their subordinates about changes in rules, policies, and standard procedures, offering explanations to ensure everyone was well-informed.

Monitoring tasks and performance. Health officers actively observed their subordinates' activities to assess their strategies' effectiveness and determine if adjustments were necessary. This monitoring allowed them to identify areas that required improvement or modifications to their approach. Health officers could make informed decisions to optimize the overall workflow by closely monitoring performance.

Problem solving. Health officers have developed a common approach. When faced with an issue, they prioritize resolving it themselves before escalating it to a supervisor if needed. This proactive approach is evident among health officers, who take ownership of the problem and aim to find a solution promptly. They demonstrate their commitment to addressing challenges efficiently and effectively by taking immediate action. The leadership behaviors exhibited by the health officers during the pandemic reflect a clear alignment with task-oriented leadership strategies, which prioritize efficient planning, clear communication, active monitoring, and proactive problem-solving, illustrating their leadership approach in response to the operational challenges posed by COVID-19. These strategies were crucial in addressing staff shortages and optimizing workflow, particularly by assigning double roles and reallocating personnel based on immediate needs. This task-oriented leadership aligns with existing literature on pandemic leadership, reinforcing the importance of adaptability and effective planning in managing healthcare crises.

The leadership behaviors identified in this study resonate with established theories and findings in leadership literature, particularly those observed in high-stakes environments like healthcare during crises. The extracted codes from all sub-categories of task-oriented behavior indicate that the behavior of health officers during the pandemic was predominantly task-oriented. This finding aligns with a study by Sriharan et al. (2022), highlighting the prevalence of task-oriented leadership, particularly in preparation and planning during the pandemic. The proactive planning and real-time reassignment of staff to tackle specific bottlenecks in the workflow showcase similar strategic responses. Additionally, the assignment of double tasks to subordinates by health officers as a response to staff shortages reflects the challenges identified in the research of Stefan and Nazarov (2020), which emphasized the difficulties in implementing new work schedules due to the impact of COVID-19. Both studies highlight how adaptive scheduling became essential for optimizing limited resources and maintaining operational continuity. The planning behavior exhibited by health officers is also consistent with the findings of Francisco and Nuqui (2020), who identified competent planning as an essential characteristic of adaptive leadership in the new normal brought about by the pandemic. Like Francisco and Nuqui's findings, the health officers in this study demonstrated a similar capacity for strategic foresight, balancing immediate needs with longer-term objectives. This parallel reinforces the notion that worldwide healthcare leaders adopted comparable approaches to managing the unprecedented pressures during the COVID-19 crisis.

Theme 2: Similarities Among the Behavior of Health Officers Under the Relations-Oriented Behavior

Table 3. Similar open codes with significant statements for leadership behavior of health officers under relations-oriented behavior

Sub-Category	Case	Similar Codes	Ref. Id	Significant Statements
Supporting	1	Leaders deal with complaints about vaccines by helping staff explain via phone calls.	T-HWS1	"When the vaccines get mad, they will look for your head... They are reachable to talk, and we call them to help explain. Moreover, show them the guidelines... that is always our forefront in dealing with them."
	2	Mediating conflicts between subordinates and vaccines	D-HO1	"The usual problem in that situation is when the person receiving the vaccine has an issue and may misinterpret the staff's response. We immediately provide backup support to address the concern."
	3	Mediating conflicts between subordinates and vaccines	B-HO2	"When there are complaints... as the team leader, I take the initiative to communicate with the complaining patients and address their concerns."
Developing	1	Equipping subordinates with knowledge of their strategy for problem-solving.	T-HO3	"They, the doctors, explain to us the processes and the rationale behind the plans... so that as subordinates, we can understand or be equipped with the knowledge of the process. That is for the superiors."
	2	Encouraging subordinates to good behavior	D-HO1	"I assist them by guiding them on the appropriate terms to use, what they should avoid mentioning, their demeanor, voice, tone, and any necessary changes they need to make."
	3	Providing developmental coaching when it is needed.	B-HO1	"Before we even go to the vaccination site, we meet to discuss the best practices and strategies to ensure an organized and smooth process [in the vaccination site]."
Recognizing	1	Showing appreciation for the important contribution	T-HO3	"When our superiors visit municipalities or other municipalities, we boast about the support of our leaders... that is one of our starting points to show the importance of our health officers."
		Recognizing and giving praises for subordinates' efforts	T-HO3	"To subordinates, to make our work more enjoyable, we compete to see who vaccinated the most people, just to have some fun while working. We also praise the person who has vaccinated the highest number. Although it is done lightheartedly, it serves as a way to recognize the double effort put in by someone during the vaccination process."
Consulting	1	Asking peers' opinions and considering them when making a decision	T-HO1	"There are times, especially when I am not sure, that is when I seek opinions from my peers. Sometimes, instructions are given directly, while other times, I need to ask for opinions first. Then, we combine them to determine the best possible output."
	2	Raise subordinate's problems to supervisors	D-HWS2	"They collect opinions about the issues encountered within the day. Since we have different staff members each day, they ask each supervisor of the respective groups about the problems they encountered. When there are issues, they seek input on the best ideas to prevent similar problems from arising."
	3	Empower subordinates by giving them more autonomy and influence over decisions.	B-HO1	"I called the higher-level staff...to address those disruptions or chaos."

Supporting. Mediating conflicts between subordinates and vaccinees emerges as a common practice across all cases. Health officers serve as backup for their subordinates during disputes, intervening to address conflicts. The statements from cases 1 and 2 highlight how health officers argue with vaccines based on adherence to guidelines. This supportive behavior creates a conducive environment for problem resolution.

Developing. The development of subordinates' problem-solving abilities is evident in all three cases. Health officers focus on different aspects of development for their subordinates. In case 1, Tagaytay health officers equip subordinates with knowledge of problem-solving strategies, emphasizing the importance of a well-defined

approach. Case 2 demonstrates behavior-focused development, with Dasmariñas health officers providing guidance on improving behavior when dealing with irate vaccinees, including advice on appropriate terms and adopting a moderate tone. In case 3, Bacoor health officers conduct meetings to coach subordinates, enhancing their response to problems through active training.

Recognizing. Recognizing the efforts of subordinates is evident in case 1, where Tagaytay health officers praise and appreciate both the important contributions of their superiors and the efforts of their subordinates. A competition-like approach is implemented, where the vaccinator who vaccinates the most individuals receives recognition. However, cases 2 and 3 lack recognition behaviors. This underscores the importance of acknowledging and appreciating subordinates' efforts, as recognized by Tagaytay health officers.

Consulting. Consultation with colleagues is a consistent practice observed in all cases. Health officers consult with their superiors and subordinates to gather ideas, concerns, and perspectives for problem-solving. In case 1, Tagaytay health officers seek peers' opinions when in doubt, ensuring a collaborative decision-making process. Case 2 demonstrates the importance of collecting ideas and opinions from staff assigned on different days at the vaccination site, as shown by Dasmariñas health officers. In case 3, Bacoor health officers consult supervisors for guidance, aiming to make informed judgments and resolutions. These consultation practices promote inclusivity and consider multiple perspectives in problem-solving.

The health officers exhibit various relations-oriented behaviors that highlight their role in supporting their teams and maintaining a collaborative environment. However, the results suggest a notable gap in recognizing subordinates' efforts, especially in cases 2 and 3, where such behaviors are absent. This deficiency could potentially affect the motivation and morale of the healthcare workers. Despite this, health officers excel in mediating conflicts and providing ongoing development and consultation, fostering a collaborative and supportive work culture.

Despite the health officers being task-oriented, there appears to be a deficiency in their relations-oriented behavior, specifically in recognizing the efforts of subordinates at the vaccination sites. This deficiency is evident in cases 2 and 3, aligning with the findings of Nyashanu et al. (2020), who noted that the lack of recognition negatively impacts healthcare workers' mental health. The absence of recognition can hinder long-term motivation and performance, especially in high-pressure environments such as pandemic healthcare settings. On a positive note, the health officers demonstrate supportive behavior by mediating conflicts between vaccinees and subordinates, as observed in the study by Stefan and Nazarov (2020). This aligns with the notion that leaders in organizations should exhibit a protective and positive attitude towards their teams, which enhances teamwork and conflict resolution skills among healthcare staff. Furthermore, the health officers' practice of consulting with colleagues for decision-making aligns with the findings of Beilstein et al. (2021), which emphasize the importance of ensuring the right decisions by seeking input from colleagues and ensuring their constituents favor the chosen course of action. This consultation-based approach reflects an understanding that inclusive decision-making processes lead to more informed and collaborative outcomes. Similarly, the health officers' consultation approach resonates with the study by Vrontis et al. (2021), which emphasizes the empowerment of subordinates to contribute their ideas and suggestions for improving healthcare services. This collaborative environment enhances problem-solving efficiency and increases job satisfaction and team cohesion.

Theme 3: Similarities Among the Behavior of Health Officers Under Change-Oriented Behavior

External monitoring. The health officers actively engage in external coordination. They collaborate with other LGUs to address various needs, such as ensuring sufficient staff at vaccination sites, securing necessary supplies, and coordinating hospital referrals.

Envisioning change. The health officers demonstrate their ability to generate ideas and drive change when faced with challenges. They propose new strategies and solutions, as seen in case 3, where a significant statement highlights their commitment to developing innovative approaches. In case 1, Tagaytay health officers actively foster a sense of commitment to adopting new strategies by continuously evaluating and refining them. In case 2, Dasmariñas health officers encourage their peers to share information and ideas for improving the vaccination site.

Table 4. Similar open codes with significant statements for leadership behavior of health officers under change-oriented behavior

Sub-Category	Case	Similar Codes	ID	Significant Statements
External monitoring	1	External coordination	T-HO1	"If the officers cannot handle it, we refer it to our local vaccination operation center, which serves as the main inter-local agency of Tagaytay City, in case there are any changes or adjustments needed."
	2	External coordination	D-HO2	"Even the BFP, Police, and their respective department's nurses send their personnel here for augmentation as vaccine administrators."
	3	External coordination	B-HO2	"Coordinate with the DOH and regional office regarding supplies."
Envisioning change	1	Proposing a strategic plan for resolving a conflict	T-HO1	"We adopted various changes and iterations until we achieved the smoothest and easiest flow, and that is what we utilized."
	2	Quickly propose a strategy for responding to a problem	D-HO1	"We immediately count the vaccines to determine if we have enough or if there is a shortage. Our CoVax head emphasized the importance of promptly checking the inventory to ensure an adequate supply, as vaccines are generally available."
	3	Increasing their awareness of problems without creating an excessive level of distress	B-HO2	"Usually, before or after each session, we have discussions about the encounters we had and identify areas that need improvement."
Encouraging innovative thinking	1	Putting the subordinates in the shoes of others	T-HO1,	"There are times when the vaccination program itself becomes extremely exhausting. The complaints, especially from the vaccines, add to your exhaustion and weariness, as dealing with problems can contribute to burnout. When you are working on solving those problems, it feels like you are being constantly hit with additional stress and burden because you want to ensure a resolution. However, once the problem is resolved, it feels relieving because you have been relieved of that burden. When you successfully find a solution for the second time, there is a sense of relief because the problem has been resolved."
	2	Putting the subordinates in the shoes of others in solving problems	D-HO1	"You put them in the situation of the problem. It is like saying, 'put yourself in the shoes of others...' With the staff, you make them feel, 'if you were in that situation, what would you want to happen?'"
Facilitating Collective learning	1	Encouraging subordinates to resolve problems by themselves to exercise their decision	T-HO3	"When let us say we have irate clients, we let the subordinate deal with it first. We allow the person and our manpower to deal with the concerns or issues so they can practice what needs to be done and decide on the actions they should take for the future."
	2	Facilitate subordinates to recognize causes better and identify remedies	D-HO1	"[I] talk to them as an adult about the cause of the problem. Knowing their side and then the situation. Then, both of [us] will talk about the best thing to do, [the solution is] not just from me."
	3	Leader support activities to acquire new knowledge from external sources.	B-HO1	"Because, just like in COVID, there is a designated person in charge who attends orientations and then relays the information to the other nurses."

Encouraging innovative thinking. It is evident among the given significant statements of the participants in cases 1 and 2 that the health officers encouraged innovative thinking. However, there is no extract code in case 3. Significantly, in case 1, subordinates were encouraged to think through brainstorming with colleagues for the best options, opinions, and suggestions for strategies for solving problems. In case 2, the health officers facilitate the subordinate to put himself in the situation of the complaining vaccinee to come up with a solution to the problem.

Facilitating collective learning. The health officers actively facilitate collective learning. In cases 1 and 2, they encourage subordinates to think independently, allowing them to recognize solutions and learn from their experiences. In case 3, a significant statement indicates that the health officer supports the designated person in attending seminars on vaccination, ensuring they stay updated and become a reliable point of contact for any inquiries.

The health officers' change-oriented behaviors reflect their proactive stance in addressing external challenges and fostering innovation within their teams. By actively engaging in external monitoring, they collaborate with other LGUs to secure essential resources and support for their vaccination programs. Their strategic initiatives and encouragement of peer-driven problem-solving demonstrate their capacity to envision change. However, a gap is evident in case 3, where encouraging innovative thinking is absent, raising questions about whether specific situational factors might inhibit this behavior. Facilitating collective learning remains a strong practice across all cases, as health officers continuously promote independent thinking and professional development within their teams.

The cases demonstrate the health officers' engagement in external monitoring, wherein they establish coordination with other Local Government Units (LGUs) to fulfill their needs. This finding aligns with the research conducted by Sriharan *et al.* (2022), which highlights that leaders during a pandemic often engage in collaborative efforts to support decision-making processes. These efforts ensure that resources are pooled effectively, allowing vaccination sites to function smoothly despite logistical challenges. The coordination also reinforces the importance of collective problem-solving among various government entities during a crisis, a crucial aspect of maintaining public health operations. However, it is important to note that there is a notable gap in encouraging innovative thinking among subordinates, as evidenced by the absence of relevant codes in case 3. This absence may suggest a lack of opportunity or structural challenges that limit the encouragement of innovation in that particular setting. Further investigation is required to understand the underlying reasons for this absence and determine if specific challenges necessitate the utilization of this behavior in that particular case. The absence of innovative thinking may also reflect the varying degrees of leadership flexibility and autonomy in different LGUs, as some settings may emphasize strict adherence to protocols over creative solutions. Within the category of envisioning change, the health officers' emphasis on developing new strategies to address problems and drive change resonates with the findings of Vrontis *et al.* (2021), who suggest that effective leadership responses to the COVID-19 pandemic involve creating a sense of urgency and adaptability. This adaptability is crucial in pandemic settings, where rapidly changing circumstances require leaders to envision new approaches and inspire their teams to embrace these changes. The proactive behavior seen in cases 1 and 2, where health officers encourage brainstorming and independent problem-solving, mirrors this urgency in implementing effective solutions. Additionally, the health officers' approach to facilitating collective learning demonstrates their commitment to continuous improvement. By encouraging subordinates to reflect on their experiences and providing access to training and seminars, as seen in case 3, the health officers align with leadership strategies that prioritize the professional growth of their teams. This practice is consistent with the findings of Sriharan *et al.* (2022), which highlight that leadership during the pandemic often involves creating learning opportunities to enhance the workforce's adaptability and knowledge base.

Theme 4: Behavior Where They Conduct Their Leadership Function via Electronic Communication System

These electronic communication systems were online or on mobile phones between the leaders and subordinates. There are four categories where this emerged: First is in clarifying responsibilities; second is monitoring tasks and performance; third is in supporting; and fourth is in consulting. It is evident in cases 1 and 3 that the health officers were able to communicate with their subordinates via phone through calling or texting, where in case 1, it is evident in the category of support, and in case 3, it is evident in the category of monitoring tasks and performance. On the other hand, health officers could also communicate with their subordinates online via group chat or Zoom meetings. It is evident in case 1 in the category of supporting and consulting and in case 2 in clarifying responsibilities and supporting.

Electronic communication systems are a vital part of the health officers' leadership behavior, enabling them to maintain seamless communication with their subordinates. Integrating mobile phones and online platforms, such as group chats and Zoom meetings, facilitates key leadership functions like clarifying responsibilities, monitoring tasks, providing support, and consulting. In cases 1 and 3, phone calls and text messaging allowed health officers to monitor and support their teams, online communication in group chats and virtual meetings in cases 1 and 2 played an essential role in clarifying responsibilities and consulting with subordinates. This adaptability in communication underscores health officers' flexibility in responding to real-time challenges, particularly in high-pressure situations such as vaccination site management during a pandemic.

Thus, they exhibit their leadership behavior through face-to-face and electronic communication systems when responding to problems on-site at the vaccination sites. This leadership practice is similar to the study of Thambusamy and Bekiroğulları (2020), where virtual leadership evolved during the pandemic as leaders adapted to social distancing and remote work constraints. Health officers in Cavite similarly adopted electronic communication tools to bridge the gap between physical and remote work settings, ensuring their leadership remained effective despite limited face-to-face communication. Moreover, this behavior mirrors the findings of Covarrubias, Dunaetz, and Dykes McGehee (2021), which highlighted how technology became an essential tool for maintaining connections and relationships during the pandemic. In the case of the health officers, virtual communication platforms were crucial not only for task-oriented activities like clarifying responsibilities and monitoring performance but also for relational aspects of leadership, such as providing support and consulting with subordinates. The ability to maintain strong connections through technology demonstrates the health officers' adaptability in managing operational and interpersonal dynamics during the vaccination process. Similarly, the study by Beilstein et al. (2020) shows that leaders used electronic communication tools to provide feedback, handle concerns, and present future plans. The health officers' use of phone calls, text messages, and online meetings reflects this trend, particularly in how they facilitated distant communication while ensuring that their teams remained informed and engaged. Video conferencing and group chats allowed for real-time collaboration and problem-solving, proving that technological tools were instrumental in supporting leadership functions across different categories of behavior, from task-oriented to relations-oriented and change-oriented leadership.

Apart from the behavior of health officers as demonstrated by the hierarchical taxonomy of leadership behavior, there is an emerging category of behavior coded on responding to problems in the vaccination site among the 3 cases. It is the emotion of the health officers.

Theme 5: Feeling of Relief and Recognition of Strengths and Weaknesses After Solving the Problem

In the first case, "feeling relief when the problem is solved and being acknowledged by vaccines"; in the second case, "feeling glad of recognizing own strength and weakness"; in the third case, "feeling relieved of being able to solve issues." In the first and third cases, the health officers felt relieved after solving the problems. The health officers felt relieved by the leader's emotion after providing a solution to the problem. The health officers' experiences of emotional relief and self-awareness after problem-solving highlight the internal reflection that accompanies leadership during challenging times. In all three cases, the health officers expressed relief after resolving issues, with case 1 noting a sense of acknowledgment from vaccines and case 3 simply emphasizing the relief of having solved problems. Case 2 stands out, where the health officers felt a deeper self-awareness, recognizing their strengths and weaknesses. This reflective process provides emotional relief and helps leaders grow by understanding their abilities more clearly.

The second case stands out among the three cases due to the health officers' "feeling glad of recognizing own strength and weakness." This emotional response conforms to one of the five key elements of emotional intelligence in leadership, as outlined by Goleman (2004), which is self-awareness. In this instance, the health officers reflected on their communication skills, recognizing their strengths and weaknesses as leaders. This process of self-reflection is crucial for personal development. It is a cornerstone of effective leadership, as self-aware leaders are better equipped to manage their teams and respond to crises with a balanced perspective. This finding aligns with Beilstein et al. (2020), which suggests that the COVID-19 pandemic exposed many leaders' weaknesses and provided them with opportunities to learn from their mistakes. Similarly, the health officers' experiences during the pandemic tested their problem-solving skills and revealed their limitations, giving them valuable insight into areas for improvement. The health officers' ability to identify these areas shows emotional intelligence, demonstrating the capacity for self-awareness and self-regulation—key components of Goleman's emotional intelligence framework. The health officers' feelings of relief after solving problems are also significant in the first and third cases. This emotional relief reflects a natural response to the stress and pressure of leading during a crisis. The sense of acknowledgment by vaccinees in case 1 underscores the importance of recognition and feedback in leadership. Acknowledged for their efforts not only alleviates stress but also reinforces their sense of accomplishment and effectiveness. This echoes findings from studies on emotional resilience in leadership, where leaders who receive positive reinforcement from their teams or constituents often report higher levels of

job satisfaction and emotional well-being. Furthermore, the emotional relief the health officers feel after resolving issues highlights a common aspect of leadership under pressure—solving problems provides a sense of closure and emotional release. As seen in the literature, such feelings are part of the emotional cycle of leadership, especially during crises like the pandemic, where leaders must navigate complex challenges while managing their emotional responses.

3.3 Factors that Affect the Behavior of the Health Officers from the Selected Cities of Cavite in Solving the Problems in the Vaccination Program On-Site

The health officers were asked about the factors that affect their behavior in solving the problems at the vaccination sites. Only one theme emerged as a factor: the negative attitude of vaccines toward the staff.

In **Case 1**, Tagaytay City, the irate vaccines were the factor that affected the behavior of the health officers. Specifically, these were: First, the bad attitudes of vaccines. Significantly, the bad mood of the vaccines influenced the health officer to feel bad at work. On the other hand, it motivated them if the vaccines were in a good mood. Second, the close-minded vaccinees. Significantly, they refused to accept the health officers' explanation. Third, there are complaints about vaccinees. Significantly, there were complaints from senior citizen vaccinees due to the post-COVID reactions. They blamed the health officers, and the vaccinees became enraged and violent with them. Fourth, the threat of vaccinees to the health officers. Significantly, some vaccinees blame the health officers for the negative reaction in the body of the vaccinee.

In **Case 2**, Dasmariñas City, health officers' behavior was also affected by the irate vaccinees. Specifically, these were: first, misbehaved vaccinees. Significantly, the stubborn ones insisting their beliefs as if they were experts in the field; Second, the highly opinionated vaccinees. Significantly, some vaccinees act as though they know better than the health officers and dismiss their suggestions; Third, the complaints of vaccinees. Significantly, some vaccinees insisted on their desire. Fourth, there was a threat by vaccinees to the health officers. Significantly, some vaccinees threatened to report the health officers to the higher government officials because they could not meet their demand field.

Lastly, in **Case 3**, Bacoor City, health officers' behavior is affected by the negative attitude toward the vaccinees. Specifically, the disorganized queue of vaccinees. Significantly, there were times when the queue of vaccinees got messy, and take her to correct it immediately.

The negative attitude of vaccinees emerged as a dominant factor influencing the behavior of health officers across all three cities: Tagaytay, Dasmariñas, and Bacoor. Common behaviors included feeling demotivated by irate or close-minded vaccinees, handling complaints and threats, and managing chaotic queues. Despite these challenges, health officers demonstrated resilience, managing to enforce rules, make sound decisions, and maintain organization. The officers' interactions with vaccinees impacted their behavior and shaped their leadership qualities, helping them grow in their ability to manage conflict and uphold regulations in stressful environments. These findings underscore the influence of external stressors, such as the public's negative attitudes toward vaccination, on leadership behavior, which echoes broader research on crisis management and leadership growth during pandemics.

In short, the factor that affects the behavior of the health officers in the cities of Tagaytay, Dasmariñas, and Bacoor is the negative attitude toward vaccinees. This negative attitude is consistent with the study of Paul et al. (2020), highlighting that vaccine hesitancy and resistance are major public health concerns. The behavior of vaccinees who exhibited distrust, complaints, and threats toward health officers parallels the broader societal challenge of vaccine acceptance, as seen in Paul et al.'s research. The attitudes of the vaccinees in this study reflect how misinformation or misunderstandings can lead to heightened tensions at vaccination sites. Furthermore, the lack of policy information, contributing to vaccinees' negative attitudes, aligns with Zorn et al. (2020), who pointed out that gaps in communication about health policies can fuel public distrust. Like doctors in Zorn et al.'s study, health officers must act as key communicators to disseminate accurate, clear information to ease vaccine concerns. Zorn et al. found that doctors who effectively communicated policies could manage patient anxieties better, just as health officers in this study could manage their leadership roles by adhering to guidelines and providing factual

information. Although negative vaccine behavior posed challenges, it also led to positive outcomes in terms of leadership development.

For instance, in Case 1, the health officers of Tagaytay City enforced vaccination rules with greater firmness and confidence, knowing their decisions were aligned with protocols. This scenario aligns with the findings of Beilstein et al. (2020), where leaders faced with external pressure during the pandemic were forced to become more decisive and adaptive. The confidence the Tagaytay officers gained through confrontation with irate vaccinees reflects this adaptive behavior, suggesting that crises can sharpen leadership skills.

In Case 2, Dasmariñas City health officers demonstrated similar resilience. Despite vaccinees attempting to influence their decisions, the health officers remained steadfast, using established guidelines to justify their actions. This ability to stand firm against external pressure while maintaining clear communication mirrors findings from leadership studies on crisis management, where adhering to a set framework helps leaders maintain control in chaotic environments.

Finally, in Case 3, Bacoor City health officers focused on maintaining order despite the vaccinees' disorganized behavior. The emphasis on organization, especially when the queue became unruly, allowed the health officers to exercise their leadership by enforcing structure. This behavior reinforces the importance of discipline and order in crisis management, which parallels leadership theories that emphasize the role of structure and organization in maintaining control during high-stress situations.

In summary, the negative attitudes toward vaccines catalyzed the health officers' leadership growth. The officers became more confident, disciplined, and effective leaders by handling complaints, managing threats, and enforcing rules. These findings resonate with Beilstein et al. (2020), who argue that crises often give leaders opportunities to grow by confronting their weaknesses and adapting to new challenges. Similarly, the health officers in this study were able to reflect on their experiences and enhance their leadership abilities in response to the unique challenges presented by the vaccination program.

The study results align with Gary Yukl's Hierarchical Taxonomy of Leadership Behaviors, as the health officers demonstrated task-oriented, relations-oriented, and change-oriented behaviors in managing the COVID-19 vaccination program. Task-oriented behaviors, such as planning and clarifying responsibilities, were evident in their roles as team leaders and supervisors. Relations-oriented behaviors, including recognizing and supporting their teams, were reflected in their ability to foster collaboration and maintain morale during challenging situations. Change-oriented behaviors, such as adapting to logistical challenges and encouraging innovative solutions, highlighted their capacity to navigate uncertainties during the vaccination rollout. These findings underscore the relevance of Yukl's framework in understanding the leadership behaviors essential for effectively managing public health crises, particularly in high-pressure environments like vaccination sites.

4.0 Conclusion

The health officers were dominantly female, aged 30, and attained bachelors in the study. They were composed of both single and married. Their experience in the vaccination site was: In the first case study, they were composed of a supervisor and team leaders assigned to the vaccination area for 1 year and 8 months. The second case comprised Medical Health Officer III and the supervisor assigned to the vaccination area for over a year. The third case comprised team leaders in the vaccination area for almost 2 years. Thus, most health officers were composed of team leaders and supervisors who had held their current positions for more than 1 year when the COVID-19 vaccinations began in early 2021.

There are three concepts for understanding the leadership behavior of the health officers in responding to the problems in the vaccination site: First, using the Hierarchical Taxonomy of Leadership Behavior revealed that the health officers were task-oriented. Some aspects of their relations-oriented and change-oriented behavior were well executed, but others were not. In their task-oriented behavior, it was common for them to plan schedules, explain relevant rules to subordinates, observe the activities of subordinates, and solve problems themselves first. In their relations-oriented behavior, it was usual for them to mediate conflicts between subordinates and vaccinees, develop subordinates' ability to solve problems, and consult with colleagues. However, there was a

lack of recognition in the subordinates' work. In their change-oriented behavior, it was common among them to coordinate with other LGUs, provide ideas to colleagues to bring about a change in solving the problem and let their subordinates recognize the solution themselves and learn from it. Second, they could also conduct their leadership function via electronic communication systems through their communications with their colleagues online and via cellular networks. Thus, their communications were conducted both via electronic communication system and face-to-face to solve problems on-site. Third, they feel relief and recognize their strengths and weaknesses after solving the problem.

The negative attitude of vaccinees towards the staff was identified as the major factor affecting the leadership behavior of the health officers in solving the problems in the vaccination program on-site. These behaviors give them more conviction to stand firmer and impose the guidelines and appropriate decisions.

Based on the findings of the result, the following are highly recommended:

First, to address the feeling of health workers that the city health officers do not recognize them, the vaccination center may provide programs or activities that will recognize health workers' efforts in the COVID-19 vaccination site. In that way, they will feel the appreciation that will motivate them to perform better in their jobs. They may try to improve their relationships with their colleagues by recognizing the latter's efforts, such as providing affirmation, tapping at the back, and placing a list of top-performing health workers on a bulletin board. Further, the vaccination site may provide quarters so health workers can rest or nap during their break time. The health officers may propose a carpooling scheme for workers residing in the same or nearby areas to save gas, time, effort, and money and to make life easier for the health workers. They may try to put some fun activities in the vaccination, just like what Tagaytay health officers did, to recognize the efforts of their colleagues at work, such as having a competition-like activity in which whoever has the greatest number of vaccinated will be given words of affirmation; top-performing health workers may give a token of appreciation such as new uniform, clipboard, sanitation and hygienic supplies, and Personal Protective Equipment (PPE). Also, they may organize a quarterly social event to acknowledge birthday celebrators. These simple gestures promote camaraderie and teamwork in the workplace.

Second, the city health offices may strengthen the dissemination of information at the barangay level by orienting the vaccinees before going to the vaccination site to settle unclear instructions and processes in the vaccination area. This will reduce confusion and trigger conflict between the health workers and the vaccinees. The orientation may discuss the requirements that must be complied with before going to the vaccination site and the dos and don'ts in the vaccination area.

Third, scholars may use Gary Yukl's Hierarchical Taxonomy of Leadership Behaviors among leaders online or via electronic communication systems to handle their teams for further reference.

5.0 Contributions of Authors

Completing this research was collaborative, with all authors contributing equally to its various aspects. Responsibilities included editing, writing, data gathering, encoding, analysis, and supervision. Specific contributions included technical critique, ensuring the research's methodological soundness, and overseeing the entire process. All authors actively participated in the preparation and review of the manuscript, approving the final version and collectively ensuring the accuracy and integrity of the work.

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Political Cynicism and Political Participation of Voters in Negros Oriental, Philippines

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Abstract. This study was designed to examine political cynicism, political participation, and their interrelationship among voters in Negros Oriental, Philippines. An overall population of 400 registered voters participated in this study. The respondents' skepticism or belief was that politicians were motivated or characterized purely by self-interest, dishonesty, untrustworthiness, being out-of-touch, incompetence, and immorality. There were two indicators of political participation: the first indicator of political participation was electoral, and the second was political voice. The first, electoral activity, "voting during elections" was highly prioritized by the respondents, having a 1.79 weighted mean. The second indicator of political participation was political voice. This indicator had a low priority to voters, with an aggregate mean of only 0.46, whose verbal description was 'not applicable.' There was an inverse relationship between the two factors investigated in this study. With elevated perceptions of political cynicism, marked by beliefs in dishonesty, incompetence, and detachment from the public, political engagement declined, especially in non-electoral activities. High political cynicism hurts participation and constitutes an important area of relationship with implications for political theory and practice. Measures like transparency and accountability will promote the people's involvement in more extensive issues since such policies will help restore confidence and reduce cynicism. Therefore, Policies are important, promoting ethical behavior amongst politicians to rebuild trust and evoke a more participating citizenry.

Keywords: Election; Negros Oriental; Political cynicism; Political participation; Voting

1.0 Introduction

Political cynicism is an important study area due to its significant implications for political participation, a vital component of democratic governance. Political cynicism, characterized by skepticism and distrust toward political institutions and leaders, directly impacts the willingness of citizens to engage in activities like voting, campaigning, and influencing policy. This engagement is essential for legitimizing democratic systems, fostering accountability, and ensuring effective representation. Understanding how cynicism shapes these behaviors is critical for assessing the health of democratic institutions and addressing barriers to citizen involvement. Scholarly works have emphasized the negative consequences of political cynicism on participation. Dahl (1971, 1998), Pateman (1970), and Easton (1965) argue that broad participation is a cornerstone of democratic governance, and a lack of citizen involvement can threaten the legitimacy of governments. Uhlaner (2015) highlights the socioeconomic dimensions of participation, showing that wealthier and more educated individuals are more likely to engage in political activities. This raises questions about whether political cynicism disproportionately affects certain demographics, further exacerbating participation disparities.

Political cynicism has been a subject of academic inquiry in the Philippines since the 1960s. Hollnsteiner (1962) and Lande (1968) observed that Filipino electoral behavior often centered on personal loyalty to politicians rather than ideological alignment. During the Marcos regime, researchers such as Sicat (1970, 1976) and Youngblood (1972) documented youth cynicism, which framed politics as self-serving yet still acknowledged the government's capacity to address national problems. These studies laid a foundation for understanding the cultural and historical dimensions of political cynicism in the Philippines. However, existing literature often overlooks the nuanced effects of political cynicism on specific forms of participation and its potential to foster critical engagement rather than disengagement. Pederson (2012) suggests that cynicism might reflect an engaged and questioning public, challenging the assumption that it is inherently detrimental. This research seeks to fill this gap by examining the relationship between political cynicism and participation in Negros Oriental, where localized factors such as socioeconomic disparities and historical political trends may shape this dynamic uniquely.

This study provides an empirical investigation into the interplay between political cynicism and participation in a specific regional context, offering insights that can inform broader discussions on democratic governance. With the Philippines set to hold a national election in May 2025, understanding the dynamics of political cynicism is especially urgent. Elections are a critical avenue for citizen participation, and high levels of cynicism could suppress voter turnout, skew electoral outcomes, or undermine public trust in democratic institutions. By addressing the complexities of this relationship, this research contributes to a more nuanced understanding of how political cynicism influences democratic processes and identifies strategies for fostering meaningful engagement among citizens, ensuring their active and informed participation in the upcoming electoral exercise.

2.0 Methodology

2.1 Research Design

This research used a descriptive-correlational design to examine the relationship between political cynicism and political participation among voters. It assessed political cynicism, defined as distrust toward political systems, as a factor influencing participation in activities like voting and campaigning. By analyzing the strength and direction of this relationship, the study provided insights into whether cynicism hinders participation, drives alternative engagement, or reflects broader societal attitudes.

2.2 Research Locale

The study was conducted in the cities and municipalities of Negros Oriental, a province located in the Central Visayas region (Region VII) of the Philippines. Negros Oriental is geographically situated in the southeastern part of the island of Negros, bordered by the province of Cebu to the north and the Sulu Sea to the south. The province comprises six cities and nineteen municipalities, each with its unique demographic and political landscape.

2.3 Research Participants

The respondents of the study were registered voters from the province of Negros Oriental, aged 18 years and above. According to the Commission on Elections (Comelec), as of the October 25, 2018, Election Registration Board (ERB) hearing for the May 13, 2019, National and Local Elections, Negros Oriental had a total of 1,036,112 registered voters. Slovin's formula was applied to determine the appropriate sample size for the study, ensuring that the sample accurately represented the larger population of voters in the province. A total of 400 voters were selected as the sample for this study. These respondents were proportionately distributed and randomly identified across the six cities – Bais City, Bayawan City, Canlaon City, Dumaguete City, Guihulngan City, and Tanjay City – and the 19 municipalities – Amlan, Ayungon, Bacong, Basay, Bindoy, Dauin, Jimalalud, La Libertad, Mabinay, Manjuyod, Pamplona, San Jose, Siaton, Sibulan, Sta. Catalina, Tayasan, Valencia, Vallehermoso, and Zamboanguita.

To ensure the sample accurately reflected the province's diversity and avoid bias, respondents were selected from various barangays within each city and municipality. This random and proportionate selection process aimed to capture a broad spectrum of perspectives, ensuring that the study results would be representative of the entire province without favoring any particular geographic area. By including a wide range of respondents from both urban and rural areas, the study minimized potential inconsistencies. It ensured that the findings would provide a comprehensive understanding of political cynicism and participation across different regions of Negros Oriental.

2.4 Research Instrument

The data-gathering instrument was a questionnaire. The questionnaire was composed of three parts. Part I deals with the respondents' demographic profile. Part II delves into the respondents' extent of Political Cynicism composed of 30 item statements equally distributed across six dimensions: self-interest, dishonesty, untrustworthiness, out-of-touch, incompetence, and immorality. Each statement had corresponding descriptive levels like 1 referring to I do not know, 2 disagree, and 3 agree. Moreover, Part III contained items pertaining to the respondents' extent of participation relating to past elections with corresponding scaling descriptors like: 1 not applicable, 2 low priority and 3 high priority. The Cebuano translation of the questionnaire was checked and translated by Ms. Myrna S. Yape of the Foreign and Filipino Department of Silliman University. Considering that it was a researcher-made questionnaire, it was subjected to reliability testing by using a group of respondents similarly situated as the final set of respondents who will not be included in the final data collection and by applying Cronbach Alpha. To ensure reliability, the instrument was reviewed and pretested with 40 registered voters from Guihulngan City to ensure the questions could measure what it intended to measure and whether words and directions were clear and easy to understand. After revising the questionnaire based on the experts' suggestions, it was shown to the adviser for approval. The instrument was found highly reliable, with a reliability of .90. Upon the go signal of the adviser, statistician, and the ethics committee, the final copy of the questionnaire was reproduced and distributed to the target respondents.

2.5 Data Gathering Procedure

The researcher wrote a letter to the provincial director of the Commission on Elections (Comelec) requesting a list of registered voters in Negros Oriental and a letter asking for the permission of the City/Municipal Mayor and of the Barangay Captain for the conduct of the study. Then, the letters with the questionnaires were distributed to various registered voters. The data gathering was personally administered by the researcher with the help of her sister, colleagues, and students in the different cities and municipalities of Negros Oriental. The researcher gave the instructions, and the respondents answered on their respective copies of the questionnaire, which was collected afterward. The data was checked to ensure the correctness of their answers. The data from the questionnaires were tabulated, computed, and analyzed.

2.6 Data Analysis

The data collected were analyzed using percentage distribution, Pearson Product Moment r , Chi-square test of independence, and Spearman rho. Percentage distribution was used to present the distribution of the respondents across categories. Pearson Product Moment r was employed to determine the extent of the relationship between age and the extent of political cynicism and participation. The same instrument was used in determining whether or not a significant relationship existed between income and political cynicism, and political participation. The chi-square test of independence was used to ascertain the degree of relationship between sex, marital status, religion, educational attainment, political cynicism, and political participation. Moreover, Spearman Rho was employed to ascertain if a significant relationship existed between the extent of political cynicism and participation. In all the correlational analyses, the level of significance was at 0.05.

2.7 Ethical Considerations

Letters were presented to the respondents regarding the study and its purpose. Respondents' responses were treated with the utmost confidentiality, and their identity was kept anonymous during the processing and interpretation of the data. The processed questionnaires were shredded and burned after the data had been processed and interpreted in the report. The researcher applied for an ethics review to the Silliman University Research Ethics Committee and submitted a copy of the proposal to the UREC Chair or Secretary for review. The Commission on Elections (Comelec) also provided the researcher with a data privacy certification for the respondents. Additionally, respondents were well-acquainted with the study's objectives and purposes and had the prerogative of free choice, enabling them to consent or decline participation voluntarily.

3.0 Results and Discussion

3.1 Political Cynicism of the Respondents

The respondents' political cynicism is categorized into six dimensions: self-interest, dishonesty, untrustworthiness, being out-of-touch, incompetence, and immorality. The data in Table 1 indicate a general

feeling of political cynicism among respondents, particularly with regard to self-interest in political actors. With an overall mean of 1.45, each item in the table has a mean rating above the agreement level (1.34), suggesting that respondents largely concur with the claims that politicians' self-serving intentions are reflected in them.

Table 1. *Political cynicism of the respondents according to self-interest*

Self-Interest	Mean	Description
Politicians are mainly involved in politics for the personal benefit of themselves and their families, not the community's benefit (Marsh, 1990).	1.53	Agree
Politicians are interested only in getting the people's votes, not in their suggestions for improving government functioning (Pinkleton & Austin, 2002).	1.46	Agree
The politicians are concerned with winning and enriching themselves. (Cappella & Jamieson (1997).	1.45	Agree
Politicians only care about themselves or special interests and not the condition or welfare of the people. (Pinkleton & Austin, 2002).	1.44	Agree
Government officials tend to be somewhat crooked or corrupt (Erber & Lau, 1991).	1.38	Agree
Aggregate	1.45	Agree

Legend: I Do not Know (0.00 - 0.66), Disagree (0.67 - 1.33), and Agree (1.34 - 2.00)

The belief that politicians put their own or their families' interests ahead of the good of the community is consistent with the opinions of Marsh (1990) and Cappella and Jamieson (1997), who contend that political participation is frequently motivated by self-interest rather than the general welfare. According to Pinkleton and Austin (2002), this perception also includes the idea that politicians only care about winning votes rather than appreciating the public's suggestions for better government. Additionally, respondents believe that politicians are susceptible to corruption or questionable ethics, reinforcing the narrative of distrust in political figures. This trend implies a broader disenchantment with political actors, reflecting skepticism about their integrity and intentions.

The data presented in Table 2 reveals a strong consensus among respondents regarding political dishonesty. Each item has a mean rating above the threshold for agreement (1.34). The aggregate mean of 1.58 further reinforces the respondents' agreement that politicians engage in dishonest practices.

Table 2. *Political cynicism of the respondents according to dishonesty*

Dishonesty	Mean	Description
Politicians will say anything to please the public (Austin & Pinkleton, 1995).	1.69	Agree
Politicians usually abuse authority to get what they want, regardless of how the people are affected (Foley, 2015).	1.58	Agree
Our political leaders are prone to make promises they do not intend to fulfill (Rijkhoff, 2015).	1.57	Agree
Politicians will lie about their opponents to get ahead (Foley, 2015).	1.55	Agree
Politicians lie about their goals and aspirations (Cappella & Jamieson, 1997).	1.50	Agree
Aggregate	1.58	Agree

The highest-rated item, "Politicians will say anything to please the public" (Austin & Pinkleton, 1995), reflects a particularly strong belief among the respondents that politicians are willing to deceive the public for personal or political gain. The responses suggest that the respondents perceive politicians as prone to dishonesty, including abusing their authority to get what they want, making empty promises (Rijkhoff, 2015), and lying about their goals or opponents (Cappella & Jamieson, 2023). This pattern of dishonesty indicates a broader disillusionment with the integrity of political leaders.

The findings align with psychological studies, such as those by Shu and Gino (2012), who noted that individuals who lie tend to blur the lines of honesty, often forgetting the rules about deception while remembering other details. Additionally, the concept of moral compensation, as described by Jordan (2011), suggests that politicians may justify their dishonesty by promoting themselves as virtuous or engaging in prosocial actions to offset their deceptive behaviors. This reflects a deep-seated mistrust of political figures, as respondents strongly associate politicians with dishonesty and manipulation.

The data in Table 3 shows that the respondents overwhelmingly perceive politicians as untrustworthy, as reflected in the consistently high ratings across all the indicators. With an aggregate mean of 1.60, which falls within the "agree" category, the respondents demonstrate a strong belief in the untrustworthiness of political figures.

Table 3. *Political cynicism of the respondents according to untrustworthiness*

Untrustworthiness	Mean	Description
Politicians consciously promise more than they can deliver (Adriaansen, van Pragg & de Vreese, 2010).	1.68	Agree
Politicians will sing, dance, or entertain voters to hide their incompetence or lack of qualifications.	1.61	Agree
Politicians lie to the media and the public to deceive voters to vote for them and are not sincere (Craig, Niemi & Silver, 1990).	1.58	Agree
Politicians emphasize their fame or celebrity status but are, in reality, unqualified and incompetent or lack the needed knowledge.	1.56	Agree
People running the government waste much money on fanciful or grandiose projects, making the country indebted.	1.55	Agree
Aggregate	1.60	Agree

The most highly rated item, "Politicians consciously promise more than what they can deliver" (Adriaansen, van Pragg & de Vreese, 2010), indicates that respondents perceive politicians as making unrealistic promises to gain votes or support, which they are unable or unwilling to fulfill. This sentiment is reinforced by the other indicators, highlighting politicians' tendency to use superficial tactics, such as entertaining voters or emphasizing their celebrity status, to cover up their lack of qualifications or competence. Additionally, respondents believe politicians frequently deceive the public and media to manipulate voter behavior and waste public funds on unnecessary projects, exacerbating the national debt. These findings align with political theories suggesting that citizens often choose leaders based on trust – believing those they vote for will act according to their interests and values (Miller & Stokes, 1963). However, the responses reflect a breach of that trust, with politicians perceived as manipulative and dishonest. The idea of "two facades" in politics, where public figures say one thing and do another, captures the respondents' general cynicism toward political figures who fail to live up to the trust placed in them.

The data in Table 4 show a clear pattern of agreement among respondents that politicians are out of touch with the people's needs and realities. With an aggregate mean of 1.58, which falls within the "agree" category, respondents strongly believe that politicians are disconnected from the public after they assume office.

Table 4. *Political cynicism of the respondents according to out-of-touch*

Out-of-Touch	Mean	Description
Politics can be a battle of rival clans and self-interests that puts it out of touch with the people's needs.	1.63	Agree
Politicians pretend to care very much for the people during the campaign but will not care anymore after they are elected.	1.61	Agree
Politicians lose touch with the people once elected (Pinkleton, Um & Austin, 2002).	1.57	Agree
Politicians generally have no idea what they are talking about when they promise to improve the welfare of the people.	1.55	Agree
Politicians are out of touch with citizens, especially if they are rich and do not know the real condition of poverty of the people.	1.54	Agree
Aggregate	1.58	Agree

The highest-rated item, "Politics can be a battle of rival clans and self-interests that makes it out of touch with the felt needs of the people," reflects a widespread perception that political competition is more about personal gain and power struggles than addressing the genuine needs of the population. This belief is consistent with Pinkleton, Um, and Austin's (2002) view that politicians often lose touch with the people once elected. The respondents also indicate that politicians prioritize their personal interests or political power over the welfare of citizens, particularly after election campaigns. Moreover, the perception that politicians, especially those from wealthy backgrounds, are disconnected from the everyday struggles of the population, including issues like poverty, highlights a growing sense of alienation between elected officials and their constituents. This reinforces the view that politicians often appear insincere, pretending to care during campaigns but failing to follow through after they are in power. Overall, the data suggests a significant level of political cynicism, where respondents feel that politicians are more concerned with maintaining power and personal interests than with genuinely improving the lives of the people they serve.

The data presented in Table 5 demonstrates a significant level of political cynicism regarding politicians' competence. Respondents expressed agreement across all five indicators related to perceived political incompetence. The aggregate mean of 1.64, which falls within the "agree" category, indicates that respondents

strongly believe politicians are often unqualified and lack the necessary skills or experience to perform effectively in office.

Table 5. *Political cynicism of the respondents according to incompetence*

Incompetence	Mean	Description
Politicians may have famous surnames, but this does not mean they are qualified.	1.68	Agree
Politicians may campaign to attract the masses but usually are unattractive to knowledgeable and educated voters.	1.68	Agree
Many politicians are not qualified to be elected into office.	1.66	Agree
Many reelectionist candidates do not have a record of good performance.	1.61	Agree
Some candidates who are favored to win may lack educational and intellectual qualifications.	1.58	Agree
Aggregate	1.64	Agree

The highest-rated items – “Politicians may have famous surnames, but this does not mean they are qualified” and “Politicians may campaign to attract the masses but usually are unattractive to knowledgeable and educated voters” – suggest that voters perceive political campaigns as more about popularity or family name than qualifications or merit. This sentiment is further reflected in the belief that many re-elections lack a solid performance record and that some favored candidates may lack basic educational or intellectual qualifications. The responses imply a broader concern about the quality of candidates running for office, with many viewed as incompetent or unfit for leadership positions. The data highlights the need for better voter education, not just in how to vote but also in fostering critical thinking about the qualifications and abilities of candidates. Schaffer (2002) noted that politicians often address their perceived incompetence by targeting the poorer segments of the population and offering community projects or direct payoffs to secure votes. This tactic may mask their lack of qualifications while perpetuating a cycle of superficial political engagement rather than addressing the deeper issues of competence and governance.

The data in Table 6 reveals that the respondents strongly agree with politicians' immorality, as reflected in the high mean scores for most of the indicators. With an aggregate mean of 1.52, which falls within the "agree" category, the respondents strongly believe that politicians engage in immoral practices.

Table 6. *Political cynicism of the respondents according to immorality*

Immorality	Mean	Description
Politicians buy votes and will compete on who can offer more money to the voters.	1.70	Agree
Politicians spend much money because they plan to recover it or gain more after they are elected through corruption.	1.60	Agree
Politicians violate election laws to ensure their election.	1.55	Agree
Politicians will engage in “dagdag-bawas” of election results to win over their opponents.	1.44	Agree
Many politicians engage in extra-marital relationships or unwanted sexual advances.	1.29	Disagree
Aggregate	1.52	Agree

The highest-rated statement, “Politicians buy votes and will compete on who can offer more money to the voters” (1.70), highlights a pervasive view that vote-buying is a common and accepted practice in the political landscape. This is further supported by the belief that politicians spend large amounts of money during their campaigns to recoup those expenses through corrupt practices once they are in office, as indicated by the 1.60 mean score for the statement, “Politicians spend much money because they plan to recover it or gain more after they are elected, through corruption.”

The respondents also agree that politicians violate election laws and engage in fraudulent practices like “dagdag-bawas” (vote manipulation) to secure electoral victories, with scores of 1.55 and 1.44, respectively. This suggests a strong perception of dishonesty and corruption within the political system, reinforcing the view that politicians often bend or break the rules to maintain power. Interestingly, the lowest-rated item in this dimension, “Many politicians engage in extra-marital relationships or unwanted sexual advances” (1.29), indicates that respondents do not strongly associate politicians with sexual immorality. While there have been instances of such behaviors among political figures, the general perception among respondents is that this is not as pervasive as other forms of immorality, such as vote-buying and corruption. Overall, the data reflects a deep-seated cynicism about the moral integrity of politicians, particularly regarding their involvement in corrupt practices like vote-buying and

election manipulation. This aligns with Schaffer's (2002) observation that electoral reforms to curb such practices have historically been driven by middle- and upper-class movements, underscoring the challenge of addressing entrenched political immorality.

3.2 Political Participation

In Table 7, the political participation of the respondents is broken down into two components: electoral and political voice. Many studies in political science on citizen's political participation focus on electoral involvement. However, more recently, the focus has become broader, including different types of participation and civic engagement (Brady, 1999). Most scholars focus on active participation, which can be classified by frequency, regularity, and range, such as voting, contributing money, and attending meetings. The first indicator of political participation is electoral, which consists of nine (9) statements. The respondents rated each statement or electoral activity according to their priority level (high priority, low priority, or not applicable).

The data in Table 7 reveals the varying levels of political participation among respondents, with a clear distinction between the prioritization of voting and other forms of political engagement. The statement "Voting during elections" received the highest score of 1.79, categorizing it as a high priority for the respondents.

Table 7. Political participation of the respondents

Electoral	Mean	Description
Voting during elections.	1.79	High Priority
Participating in a meeting organized by the government to initiate citizens' involvement and participation.	0.78	Low Priority
Participating in a political caravan to support a particular candidate.	0.62	Low Priority
Going to any political meetings, rallies, speeches, fundraising, dinners, or things like that in support of a particular candidate.	0.59	Low Priority
Talking to people and showing them why they should vote for or against one of the parties or candidates.	0.58	Low Priority
Placing a poster at a window or in front of the house.	0.51	Low Priority
Doing any work for one of the parties or candidates.	0.50	Low Priority
Wearing a campaign pin.	0.48	Not Applicable
Putting a campaign sticker on your car and another vehicle.	0.48	Not Applicable
Aggregate	0.70	Low Priority

This result is consistent with the high voter turnout of 86.01% in Negros Oriental during the 2019 elections, reflecting the widespread practice of voting as an important civic duty in the region. Voting is viewed not only as a right but also as an obligation under the 1987 Constitution of the Philippines, which mandates that qualified citizens must participate in elections. This activity is fundamental to the democratic process, and the respondents strongly prioritize it, aligning with the broader national emphasis on suffrage as both a privilege and civic responsibility. The respondents rated most forms of political participation, such as attending political meetings, participating in caravans, or engaging in campaign-related tasks, as low priority. The weighted means for these activities range from 0.48 to 0.78, indicating a low level of involvement or interest in these forms of political engagement. These activities include attending rallies or political speeches, placing campaign posters, volunteering for candidates, and discussing politics with others. This suggests that while these activities are recognized as part of political engagement, they are not widely practiced or prioritized by the respondents. Some activities, such as wearing campaign pins and putting campaign stickers on vehicles, were rated as not applicable by the respondents, with scores of 0.48. This indicates that these forms of political participation are either not practiced by the respondents or are considered irrelevant to their understanding of political participation.

The results reflect a general trend of low political participation in non-electoral activities. Voting remains the most prioritized activity, while more active forms of engagement, such as campaigning or attending political events, receive little attention. This could suggest a preference for more passive forms of political participation (e.g., voting) rather than active engagement in the political process. The respondents may see voting as the most effective or legitimate means of influencing political outcomes, while other activities may seem less impactful or more time-consuming. This trend is consistent with the International Social Survey Program (ISSP) findings, which indicated that Filipinos tend to expect greater government services and see voting as the primary way to hold politicians accountable. However, it also underscores the gap between formal electoral participation and

other forms of active political involvement, which could be linked to political apathy, lack of trust in the political system, or limited opportunities for meaningful engagement outside of elections.

The data in Table 8 generally indicate low levels of engagement with forms of political participation dependent on "political voice." There is very slight involvement in such activities as demonstrations, contacting media or political figures, online political discussion forums, and joining pressure groups. Activities that are perceived as low priority, perhaps where respondents lack interest, confidence, or belief in the action being effective in bringing about meaningful change, are noted to have an aggregate mean of 0.54.

Table 8. *Political participation of the respondents*

Political Voice	Mean	Description
Participating in lawful demonstrations.	0.61	Low Priority
Contacting a radio station, the TV, or a newspaper through text.	0.60	Low Priority
Contacting a politician or a civil servant to express support.	0.56	Low Priority
Contacting a political party or organization.	0.54	Low Priority
Participating in a political discussion or action via the internet, email, or text messages.	0.50	Low Priority
Write a letter or send an email to public officials, giving them your opinion about something that should be done.	0.50	Low Priority
Participating in an action or pressure group.	0.48	Not Applicable
Aggregate	0.54	Low Priority

It could be related to ineffectiveness perceived in any mechanism of political voice added to mistrust in the political system. The "not applicable" score on participation in pressure groups also signifies limited practice or relevancy perceived in this form of engagement. It may also result from structural barriers, such as a lack of accessible platforms or avenues for political communication that are genuine, interactive, and impactful. The result, however, underlines more on the dominion of more traditional electoral participation, as respondents tend to think voting during elections is more important than engaging in a continuous political exercise. Maybe depending solely on elections would partially explain why this civic culture does not precipitate more vibrant dialogue and accountability. Most of all, enriching civic education and institutional trust and building spaces where citizens will meaningfully interact with political entities can address this gap in participation.

3.3 Relationship between Political Cynicism and Political Participation

The data from Table 9 demonstrates a significant inverse relationship between various forms of political cynicism and political participation.

Table 9. *Relationship between political cynicism and political participation*

Variables	Spearman rho (rs)	P value
Self-Interest and Political Participation	-0.146	0.003*
Dishonesty and Political Participation	-0.216	0.000*
Untrustworthiness and Political Participation	-0.199	0.000*
Out-of-Touch and Political Participation	-0.259	0.000*
Incompetence and Political Participation	-0.176	0.000*
Immorality and Political Participation	-0.219	0.000*

As voters' perceptions of self-interest, dishonesty, untrustworthiness, out-of-touch, incompetence, and immorality in politicians increase, their level of political participation decreases. This relationship is confirmed by the negative Spearman's rho values for each variable, indicating that higher political cynicism correlates with lower engagement in political activities, such as voting and political voice. For example, when voters believe politicians are motivated by self-interest, they are less likely to participate in politics. This finding aligns with Huntington and Nelson's (1976) perspective, which suggests that individuals who view politicians as self-serving may not feel obligated to participate in the political process, seeing it as futile or unimportant. Similarly, when voters perceive dishonesty in politicians, their political participation declines, supporting Citrin's (1974) view that politically cynical individuals are more likely to withdraw from political activity altogether or engage in non-traditional forms of protest, such as riots or sit-ins.

Furthermore, perceptions of untrustworthiness in politicians also lead to lower political participation, reflecting the idea that people may not feel motivated to participate when they do not trust elected officials to act in the public's best interest, as suggested by Bowler, Donovan, and Karp (2007). The belief that politicians become "out-

of-touch" after being elected similarly diminishes political engagement, aligning with Pinkleton, Um, and Austin's (2002) observations that politicians often lose connection with voters once they are in office.

The relationship between political cynicism and political participation also extends to perceptions of incompetence and immorality. Voters who view politicians as incompetent or immoral tend to participate less in political activities, consistent with Thorpe's (2017) perspective on the erosion of effective governance caused by incompetent leadership and Hubbard's (2017) emphasis on the importance of moral leadership. Overall, the data underscores political cynicism—the belief that politicians are self-interested, dishonest, untrustworthy, out-of-touch, incompetent, or immoral—discourages political participation. This inverse relationship reflects the broader view that politically cynical citizens are less likely to engage in traditional political behaviors, as they perceive the political process as corrupt or ineffective. These findings resonate with the work of Rijkhoff (2015), who suggested that politically cynical individuals are less inclined to participate in demonstrations or political activities. In this sense, political cynicism leads not only to withdrawal from politics but also to a rejection of the political system as a whole, as noted by Milbrath (1981), who described cynical citizens as believing the political system is fundamentally flawed and corrupt.

4.0 Conclusion

Major inferences from the analysis found that the perception of political cynicism among respondents is strongly held alongside the view that politicians tend to be primarily selfish. Such findings coincide with the postulations of Marsh (1990) and Cappella and Jamieson (1997), citing that political actors are often moved by self-interest instead of public service. Responses of respondents in this study were that politicians are more concerned about personal and family benefits compared to the community's benefit, which means that most have no trust or little in political integrity. Consequences from these findings in terms of theories are that self-interest behavior politically can inherently lead to the breakdown of public trust and non-accountability.

There was an inverse relationship between the two factors investigated in this study. With elevated perceptions of political cynicism, marked by beliefs in dishonesty, incompetence, and detachment from the public, political engagement declined, especially in non-electoral activities. The finding thus agrees with the Huntington and Nelson (1976) theory that, for the most part, cynical citizens envision a perception that involvement in established forms of participation is useless. The theoretical implications thus underscore that elevated cynicism produces political disengagement, reduces civic participation, and perpetuates disenfranchisement. Overall, high political cynicism hurts participation and constitutes an important area of relationship with implications for political theory and practice. Measures like transparency and accountability will promote the involvement of the people in more extensive issues since such policies will help restore confidence and reduce cynicism. Therefore, Policies are important, promoting ethical behavior amongst politicians to rebuild trust and evoke a more participating citizenry.

However, future studies should include objective measures such as longitudinal studies on political trust and analyze experiences and reactions from different demographic groups concerning political cynicism. Future research directions may involve exploring how targeted interventions—political education programs, reform of institutions, or others—would change political cynicism and engagement levels. Comparative studies of political cynicism across political systems or cultural contexts also hold some promise for shedding light on broader global relevance and variability.

5.0 Contributions of Authors

The author contributes to the conceptualization, formal analysis, original draft, supervision, data curation, validation, writing-review and editing, visualization, funding acquisition, investigation, methodology, and project administration of this study.

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7.0 Conflict of Interests

The author declares that she has no known competing financial interests or personal relationships that might influence the work reported in this paper.

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Promoting SDGs 10 and 16: Building a Child Rights-Respecting Community Through the Colega Teaching Manual in Cagayan de Oro City

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Abstract. Human rights education is vital in promoting peace, justice, and equality. This study assessed the impact of the Colega Teaching Manual on child rights education, emphasizing its alignment with Sustainable Development Goals (SDG) 10 and 16. A sequential mixed-methods approach was used, integrating quantitative and qualitative data to comprehensively understand the manual's impact. A total of 273 implementers purposively participated in this study. Descriptive statistics were employed to identify patterns and trends related to the manual's impact on child rights education and community development. Thematic analysis was conducted to capture participants' experiences in implementing the manual, with insights from interviews with 15 participants highlighting themes such as professional development, dissemination, resource support, monitoring, community involvement, and addressing challenges. Triangulating survey results integrated the findings with thematic insights, which revealed positive feedback on areas such as implementation, child rights advocacy, governance, and school practices. Participants expressed high satisfaction and alignment with SDGs. An observed outcome was the notable decline in physical bullying, reflecting the manual's role in fostering safer, more collaborative, and rights-centered school environments.

Keywords: SDG; Child rights education; Teaching manual; Community engagement.

1.0 Introduction

The 1987 Philippine Constitution's Article XV, Section 3(2), mandates that "the State uphold children's rights and provide them with special protection against all forms of neglect, abuse, cruelty, exploitation, and other activities detrimental to their development." This is to make sure that the children get the best care possible. Consistent with this, the Philippine government declared and implemented Republic Act 7610, also known as the "Special Protection of Children Against Abuse, Exploitation, and Discrimination Act." This act provides special protection to children from all forms of abuse, neglect, cruelty, exploitation, discrimination, and other conditions detrimental to their development. The act outlines the state's responsibility to safeguard and rehabilitate children who face severe threats to their survival and healthy development. Thus, children's best interests shall be the utmost consideration in all actions and undertakings about children. Further, the United Nations Convention on the Rights of the Child (UNCRC), which stipulates the basic rights of children, such as survival, development, protection, and participation, calls to exert effort to promote the welfare of children and enhance their opportunities for a valuable and joyful life.

By RA 7610, the UNCRC, and the Department of Education's mission statement, which emphasizes the safeguarding and advancement of every Filipino learner's right to quality, equitable, culture-based, and comprehensive basic education in a child-friendly, gender-sensitive, safe, and encouraging environment, the Department of Education has issued several policy guidelines to uphold the rights and protection of all children. These include DepED Order 40 s. 2012, titled "DepEd Child Protection Policy"; DO 55 s. 2013, titled "Anti-Bullying Act"; DO 18 s. 2015, titled "Guidelines on CAR and CICL"; DO 32 s. 2017, known as the "Gender-Responsive Basic Education Policy"; DO 32 s. 2019, the "National Policy Framework on Learners & Schools as Zones of Peace"; and DO 31 s. 2022, titled "Child's Rights Policy: Adopting the Rights-Based Education Framework in Philippine Basic Education."

RA 11313, also called the "Safe Spaces Act," also sets rules that men and women should have similar rights, safety, and security at home and in public places, online, at work, and in schools and other training centers. The law prohibits gender-based sexual harassment in schools and training centers. It also tells school leaders how to make the policy work (Article V, Sections 20–21, RA 11313–Safe Spaces Act, 2018). The Commission on Higher Education issued CMO No. 03 s. 2022, titled Guidelines on Gender-Based Sexual Harassment in Higher Education Institutions, by the Safe Spaces Act and its Implementing Rules and Regulations (IRR). This mandate requires all higher education institutions (HEIs) to establish policies and mechanisms to prevent and punish sexual harassment and safeguard the rights of all stakeholders within the institution.

Even though DepED Orders and basic laws about protecting children have been issued and must be followed, there are still many cases of different types of child abuse across the country. According to the Philippine Star Daily (2018), eight in 10 children and young people in the Philippines have experienced some form of violence that starts at home. Accordingly, 60.4 percent of physical violence happened at home, 14.3 percent in school, 12.5 percent in the community, 7.1 percent in the workplace, and 6.2 percent during dating (CWC and UNICEF, 2018). In the context of the DepED Cagayan de Oro City division, data revealed a total of 172 bullying cases that include physical, social, gender-based, cyber, and retaliation (DepED CDO). The Child Protection Office published a report in 2019 that highlights the prevalence of bullying cases in various schools.

Concomitant to the pressing issues mentioned, strategic interventions are essential to promote children's rights and protection while addressing bullying. Therefore, we developed and integrated the COLEGA teaching manual into related subjects to prevent and reduce such incidents. The manual comprises ten lessons tailored for elementary and secondary levels. SDG 10 aims to reduce inequality within and between countries, and Goal 16 focuses on promoting peaceful, just, and inclusive societies. This study raises awareness and creates environments where everyone feels welcome. This project study assessed the impact of implementing the Colega Teaching Manual on child rights education in Cagayan de Oro. Specifically, it aimed to determine (1) the status of Colega Teaching manual implementation, (2) the experiences of the Colega implementers, and (3) the magnitude of the effect of the Colega manual.

2.0 Methodology

2.1 Research Design

A sequential mixed-method design was used in this study to get detailed information from a certain group of participants. It combined both quantitative and qualitative methods. The initial quantitative phase aimed to identify patterns and trends using a carefully designed questionnaire aligned with the study's objectives. This survey was conducted online using digital tools, enhancing accessibility and enabling the efficient collection of data from a wide audience (Creswell & Creswell, 2018). The subsequent qualitative phase deepened the understanding of these patterns by exploring participants' lived experiences, perspectives, and contextual nuances. This phase involved semi-structured interviews and open-ended questions, ensuring a more nuanced exploration of the phenomena under investigation. By synthesizing data from both phases, the study achieved an analysis, combining the breadth of quantitative data with the depth of qualitative insights, thus enriching the overall findings.

2.2 Research Locale

The study was conducted in public schools within the Department of Education (DepEd) Division of Cagayan de Oro City. Located in Northern Mindanao, Cagayan de Oro City is a highly urbanized area, often called the "City of Golden Friendship." The division manages a wide range of public elementary and secondary schools, catering to culturally diverse learners. These schools are dedicated to providing quality education that adheres to national standards, with a strong emphasis on equity, inclusivity, and the promotion of child rights. This locale was selected for the research due to its proactive efforts in implementing educational programs that create a secure, inclusive, and rights-focused environment for learners.

2.3 Research Participants

This study focused on selecting participants who had been actively involved in implementing the Colega Teaching Manual since 2018, specifically targeting school coordinators and implementers within the Division of Cagayan de Oro City. To ensure the participants possessed substantial experience and expertise, they must have served as Colega school coordinators or implementers since 2018. Additionally, participants needed to be affiliated with schools in the Division of Cagayan de Oro City and to have had direct familiarity with the Colega Teaching Manual, particularly its instructional content on children's rights.

Exclusion criteria included individuals who had not engaged with the Colega Teaching Manual since 2018, those without affiliation to the Division of Cagayan de Oro City, and those lacking direct implementation experience. This selection method aimed to gather data from a relevant and well-qualified sample of 273 participants, ensuring that the findings reflected authentic, real-world experiences, thereby enhancing the study's reliability and validity. This study evaluated the impact of the Colega Teaching Manual on community development and child rights education in Cagayan de Oro City. The findings provided valuable insights for guiding future educational policies and practices.

The adequacy of the sample size ($n = 273$) was confirmed through a post-hoc power analysis conducted using G*Power 3.1 (Faul et al., 2007). This analysis demonstrated a statistical power of 0.95 for a medium effect size (Cohen's $d = 0.5$) at an alpha level of 0.05, exceeding the recommended threshold of 0.80 (Cohen, 1988).

2.4 Research Instrument

The study utilized two research instruments to collect the necessary data. Part 1 served as a quick assessment of the Colega manual's implementation. The researchers meticulously established the validity and reliability of the instruments to guarantee that they accurately measured the intended constructs. Part 2 focused on capturing participants' experiences with the implementation process of the Colega Teaching Manual. The validity and reliability of the research instrument are crucial for the study's credibility. Validity denotes the degree to which the instrument accurately assesses its intended purpose. Three experts—a practitioner, a supervisor, and a specialist—were requested to evaluate the instrument for content and face validity to ascertain the instrument's validity. Their experience validated that the instrument precisely measures the intended concepts and is suitable for the target audience.

Reliability refers to the instrument's ability to yield stable and uniform results throughout time continuously. This study employed Cronbach's alpha, a statistical metric for internal consistency, to assess the instrument's reliability. The instrument's Cronbach's alpha value of 0.980 shows that the questions in the questionnaire are very strongly related to each other and always measure the same main idea, which is a great sign of reliability. The elevated reliability guarantees that the acquired data is correct and trustworthy, providing a robust basis for further research.

2.5 Data Gathering Procedure

Data was collected from 273 respondents who were involved in implementing the Colega Teaching Manual using Google Forms. Google Forms enables the automated aggregation of responses into a structured dataset, thereby streamlining the collection process. This approach offers many benefits, such as the capacity to engage a geographically diverse audience, facilitate real-time data collection, and guarantee participants' convenient access. Additionally, the data is securely stored and easily exported for further analysis. This approach simplifies the

survey's accessibility and enables the collection and analysis of a substantial amount of data, thereby providing a comprehensive understanding of the research subject.

As for the analysis of the collected data in this study, the first phase was treated with descriptive statistics. Statistical approaches were used to characterize and analyze the data collected from the 273 respondents participating in the Colega Teaching Manual implementation. So far, the statistics reveal patterns and trends in the data about how the Colega Teaching Manual affects child rights education and community building. Braun and Clarke's (2006) guide was used as a theme analysis tool throughout the second data collection phase. To address statistical concerns and ensure rigor, several steps were implemented. Missing data, constituting less than 5% across variables, were managed using listwise deletion to maintain dataset integrity, as this method is suitable for randomly distributed missing values (Schlomer et al., 2010). Outliers were identified using z-scores exceeding ± 3 , removing two cases confirmed as data entry errors, while authentic variations were retained for representativeness.

2.6 Ethical Considerations

To ensure appropriateness and reduce potential risks, specialists examined and verified the study instruments, including the questionnaire, before data collection. Participants' rights to confidentiality, privacy, and informed consent were rigorously respected. Responsible data collection and management ensured no harm to the identified participants. The researchers were steadfast in their commitment to upholding professional ethics and honoring the social and cultural circumstances pertinent to the investigation.

3.0 Results and Discussion

3.1 Status of the Colega Teaching Manual Implementation

Table 1. Mean distribution of the Colega teaching manual implementation (n=273)

Indicators	Mean	SD	Interpretation
1. The project centers on activities and discussions to raise awareness of children's rights and legal foundations.	3.50	0.66	Fully Implemented
2. Integrating child rights education into various subjects has effectively fostered positive learner behavior	3.39	0.61	Fully Implemented
3. Bullying and other child-related concerns were addressed during the implementation process.	3.43	0.64	Fully Implemented
4. Follow-up activities were introduced to sustain and enhance the project's impact over time.	3.28	0.66	Fully Implemented
5. Learners gained awareness of their rights and learned how to protect themselves in school, at home, and in their communities.	3.30	0.69	Fully Implemented
6. The Colega Teaching Manual has enhanced the understanding of children's rights among educators and stakeholders.	3.37	0.71	Fully Implemented
7. Children's rights education was embedded into teaching materials and curricula.	3.31	0.64	Fully Implemented
8. Using rights-based practices, Learners are taught about their rights under the Convention on the Rights of the Child.	3.48	0.61	Fully Implemented
9. Parents were actively informed and engaged in the children's rights initiative.	3.28	0.63	Fully Implemented
10. Teachers and school leaders developed a strategic plan to guide the project's implementation.	3.31	0.66	Fully Implemented
11. Training sessions equipped teachers and staff with skills in using the COLEGA Manual and applying rights-consistent teaching and discipline practices.	3.29	0.67	Fully Implemented
12. Strong leadership and clear guidance ensured the project's successful implementation and governance.	3.25	0.68	Moderately Implemented
Total Measure	3.35	0.66	Fully Implemented

Note: 1.00-1.75 Not implemented; 1.76-2.50 Partially Implemented, 2.51-3.25 Moderately Implemented, 3.26-4.0 Fully Implemented

On the Implementation Process

Moreover, studies show that incorporating children's rights into education improves social connections, reduces bullying, and strengthens the community. This aligns with Lundy et al.'s (2020) claim that integrating children's rights into the curriculum enhances students' understanding of legal frameworks and creates a school culture based on equality, respect, and protection. The Colega project, which received a high mean score, supports these findings, demonstrating the effectiveness of rights-based education in transforming institutional operations and individual conduct, making schools safer and more inclusive. Melton et al. (2020), indicated that integrating child rights education into various courses is crucial for influencing students' views and actions. By exposing students

to real-world applications of their rights, they can make more lasting changes in their behavior. The Colega project's score of 3.39 supports this, indicating that this integration encourages constructive behavioral changes in students.

Low standard deviations, however, show that the participants' views on the implementation were mostly the same. This shows that it can potentially affect how learners develop and behave in different ways. The two measures' scores of 0.66 and 0.61 are consistent with the findings of global assessments of child rights education initiatives. For instance, a 2021 UNESCO study on global best practices in child rights education noted that consistent stakeholder feedback often reveals widely approved and well-executed program designs. This makes the Colega project stand out as an example of successful execution, offering a solid basis for future initiatives seeking to accomplish comparable objectives. Thus far, findings of UNICEF (2021) highlight the importance of child rights education initiatives through strong funding, policymaking, and stakeholder engagement. The Colega project demonstrates the lasting impact of these programs on student behavior and raises awareness of human rights. The success of these initiatives supports the claims made by Pells and Wilson (2020) that teaching children's rights impacts communities, teachers, parents, and students.

On the Child Welfare and Protection

Generally, Colega was fully implemented, given that it helps teachers address different child cases in school, as revealed in the overall mean score. Notably, the Colega project promotes sustainability among school-related activities related to children's rights and protection as viewed by teacher-implementers. Also, with teacher-implementers' help, learners become more aware of their rights and protection inside and outside the school's premises. Most importantly, teachers reported that Colega had guided them in handling child issues, including bullying and other child-related cases.

With the findings above, the Colega project aligns with research on child-related issues, particularly in lobbying for rights and education. Smith and Thompson (2021) suggest that school-based initiatives to address bullying are most effective when carried out within children's rights frameworks. The project's focus on identifying and resolving bullying situations demonstrates its compliance with best practices in child protection and intervention techniques. Howe and Covell's (2021) studies support the emphasis on educating students about children's rights, arguing that doing so empowers them to identify and respond to injustices. Researchers have discovered that awareness-raising initiatives, especially those incorporated into school curricula, help students develop their advocacy and critical thinking abilities. The project's success in this area highlights how crucial it is to give kids the skills they need to defend themselves at home, school, and in their communities. Additionally, awareness-raising activities can have a cascading impact that affects not only the students but also their families and communities (Lundy et al., 2020).

Given this, rights-based interventions must be sustainable; according to UNESCO (2021), monitoring systems and follow-up initiatives are essential for long-term effectiveness. It is recommended that multistakeholder engagement and the integration of global best practices be carried out to bring about long-lasting changes in child-related activities. Similarly, UNICEF (2021) has emphasized the importance of child rights education in establishing safe communities. Therefore, the accomplishments of the Colega teaching project show a comprehensive strategy that is essential in providing insightful information for upcoming program enhancements. The initiative may continue to protect children and promote a culture of rights, knowledge, and protection by using the lessons learned from this project.

On the Colega Teaching Manual School Practices

The public schools in Cagayan de Oro have religiously implemented Colega, recognizing it as one of their practices to uplift children's rights. As revealed in the table, Colega teacher-implementers are communicating the main points of the manual to parents about their children's rights. As a result of this communication, teachers and school heads have devised a strategic development plan for the sustainable implementation of the Colega project. Nevertheless, Colega's teacher-implementers and some of the school's staff were provided with training about the manual, highlighting how these children's rights and protection are to be embedded in the school's setup, especially in instructional processes.

These results emphasize the successful implementation of school-level procedures by the Colega manual initiative, which promotes children's education on their rights. Another essential aspect of the initiative is integrating children's rights education into curricula and instructional materials. This methodical approach ensures the sustainability of rights education by incorporating it into the curriculum. Winter et al. (2020) assert that integrating rights-based content into school curricula enhances students' awareness of their rights and cultivates a respectful and inclusive community. Stakeholders consistently confirm this strategy's effective implementation and positive reception. Parents are brought into the campaign for children's rights through this approach. The community's shared responsibility to advance children's rights and welfare is fortified by parents' participation in educational programs, as per Bajaj et al. (2021).

The Colega initiative emphasizes the importance of teacher training, which provides educators with the Colega manual and rights-consistent practices to guarantee children's rights in the classroom. In order to implement theory and improve the scalability and long-term success of rights-based education programs, it is imperative to provide instructors with training. The scalability of programs is improved by the strategic planning of school administrators, which ensures that program objectives align with institutional goals. Curriculum integration, teacher training, parental involvement, and strategic planning are among the areas where the Colega initiative has effectively integrated children's rights education into school-level practices. Nevertheless, the initiative's impact could be expanded and made more scalable by making additional efforts to deepen parental engagement and expand teacher training programs.

On Leadership and Strategic Guidance in Project Implementation

School heads directed the full implementation of Colega. With support from these school leaders, teacher-implementers are nonetheless guided. Taken alone, governance was rated as moderately implemented. Bajaj et al. (2021) suggest that a moderately implemented governance structure can improve the sustainability and effectiveness of programs addressing children's rights. They suggest clearer communication, better-defined roles, and robust accountability mechanisms to enhance the program's coherence and impact.

Consequently, every project necessitates governance, encompassing accountability, explicit instructions, and aligning objectives and actions. Stakeholders agree that leadership is vital but also see gaps or inconsistencies that might prevent the project from reaching its full potential. Davies et al.'s research underlines the need for solid governance in efficiently implementing educational initiatives. Leadership is vital for mobilizing resources, aligning stakeholders, and focusing on long-term goals. Although participants' perspectives varied, reflecting disparities in leadership roles among schools or localities, the Colega effort demonstrated some leadership and strategic direction. With an emphasis on rights-based governance frameworks and frequent feedback mechanisms to guarantee adaptable leadership tactics, the program needs focused leadership training for school heads. This assessment emphasizes how crucial governance is to sustaining initiatives like the Colega teaching manual project and how strong leadership is required for long-lasting school reforms.

3.2 Emerging Themes on the Narratives of the Colega Teaching Manual Implementers

Theme 1: Dissemination and Awareness

The success of the COLEGA Teaching Manual largely relied on effective dissemination and raising awareness. Developed by the Geneva Office on Human Rights Education (GO-HRE) and pilot-tested in Cagayan de Oro, Quezon City, and Escalante City, the manual aims to teach children and youth about human rights, focusing on the Universal Declaration of Human Rights (UDHR) and the Convention on the Rights of the Child (CRC). It includes simple, engaging lessons on topics like equality and freedom and practical resources for teachers, such as activities, songs, and guides. The manual also provides simplified versions of essential human rights documents, making them adaptable to various cultural and educational contexts. Implementers stressed the importance of educating teachers, students, and the broader community to ensure a shared understanding and collective support for children's rights. Participant 2 shared that *"the orientation sessions were instrumental in explaining the manual's objectives and benefits."* This participant noted that the sessions fostered a shared commitment among the stakeholders, ensuring a clear understanding and support for the initiative's goals. Thus, the observation is consistent with Bajaj et al. (2021), who emphasized that awareness campaigns are crucial for the success of rights-based education because they help people learn, feel empowered, and become aware of the

program's goals and directions. Moreover, the orientation process facilitated understanding and catalyzed cultural change, highlighting rights education as a shared responsibility.

When asked about the importance of training, participant 4 explained that it plays a vital role in awareness and dissemination. This participant described how comprehensive training sessions equipped educators with practical tools that would help them to effectively integrate children's rights education into their daily teaching practices. This reflects the recommendations of Igbokwe et al. (2019), who emphasized the importance of teacher training in rights-based programs to ensure consistent delivery of instructions. The sessions gave teachers the tools and knowledge they needed to effectively use the Colega manual and become children's rights advocates in their schools, which had an impact within and beyond individual classrooms.

Theme 2: Monitoring

The implementers identified consistent monitoring as a cornerstone of the Colega Teaching Manual's implementation. Participants said that the systematic monitoring framework helped them keep track of progress, judge results, and make adjustments based on observations and feedback (P8, P7). Hence, this approach underscores the importance of accountability in rights-based programs. According to Davies et al. (2020), effective monitoring frameworks provide real-time data to inform decision-making and improve program delivery. The Colega Manual utilized monitoring as an evaluative tool and a mechanism for continuous improvement that ensures resolution to all challenges. Furthermore, the necessity of regular assessment also aligns with the work of Smith and Thompson (2021), who argued that successful educational programs must adopt frameworks that respond to evolving needs. Therefore, consistently monitoring the Colega Teaching Manual utilization could help achieve measurable outcomes. This iterative process of monitoring and refinement ensured the program's relevance and sustainability, fostering trust and accountability among stakeholders.

Theme 3: Resource Assistance

Resource availability emerged as a critical determinant of the manual's successful execution. Implementers consistently highlighted the need for adequate instructional materials and administrative support to facilitate effective implementation (Participants 5, 10, 13). This finding parallels the study of Lundy et al. (2020), which emphasizes that resource sufficiency is a foundational element of any successful educational program. Nevertheless, limited resources can severely compromise the ability to deliver high-quality instruction and sustain its program implementation.

Sufficient resources and appropriate budget allocation and utilization must be emphasized to ensure successful program implementation. This emphasizes that the way we plan and carry out programs should be based on human rights principles. As UNESCO (2021) notes, the sustainability of educational initiatives is contingent on aligning resources with program goals. In the context of the Colega Manual, the availability of sufficient resources such as teaching aids, training materials, and administrative support not only enhanced program execution but also reinforced its credibility among implementers. This, in turn, encouraged buy-in from educators and school leaders, which could create a supportive environment for rights-based education.

Theme 4: Community Involvement

The Colega Teaching Manual identified community involvement as vital to its success. Implementers recognized that the engagement of parents and local stakeholders plays a significant role in fostering a supportive environment for children's rights education. An implementer described community activities and meetings as important components in bridging the gap between schools and the community, ensuring the reinforcement of classroom lessons at home and in the wider social context (Participant 11). Thus, Bajaj et al. (2021) emphasized that active community involvement amplifies the success of rights-based education programs by creating a holistic approach to promoting and protecting children's rights.

By involving parents and community leaders, the Colega Teaching Manual demonstrated a participatory approach wherein stakeholders fostered collective ownership and enhanced program sustainability by embedding child's rights principles within and outside the community. According to Jerome et al. (2021), community participation is essential for creating a rights-conscious society, as it extends the impact of educational programs beyond the school setting. Since the Colega initiative focused on getting people involved in their

communities, it was able to be a transformative model for teaching people about their rights that could change both individual behavior and broader social norms.

Theme 5: Tackling the Challenges

The implementation of the Colega Teaching Manual also faced some challenges by teacher-implementers. These challenges include resistance to change, limited resources, and varying levels of understanding among stakeholders. Specifically, some of the teachers in school, especially those already in the teaching profession for quite a time, are more likely to be so resistant to the implementation. The problem here is that some of the teachers are already too focused on the traditional teaching methods without recognizing the importance of integration. One of the teacher participants confirmed this: "*One of the biggest challenges was getting some teachers to embrace new methods.*" (P14). Although some teachers are having difficulty embracing new teaching methods, such as specifically integrating children's rights in their instructional processes, this was already addressed by their heads, where teachers are given training to facilitate the implementation of Colega.

This finding aligns with common issues in educational reforms, where reluctance to change is often seen as a barrier to successful implementation. Evidence of success and consistent professional development are key strategies in overcoming this resistance and ensuring the support of stakeholders. Limited resources also posed a significant challenge, as many participants pointed out that a lack of instructional materials and administrative backing are common issues in many educational initiatives, especially those aiming to drive change, like child rights education. To overcome this, implementers made the most available resources and sought external assistance, demonstrating resilience and adaptability. This approach emphasizes the importance of proactive problem-solving in maintaining the program's momentum despite systemic challenges.

Additionally, varying levels of understanding among stakeholders affected the program's implementation. Some parents and community members needed further orientation and training to understand the program's goals and methods fully. This mirrors findings from previous research, which underscores the importance of educating and involving stakeholders for the success of rights-based programs. Implementers tailored their communication and engagement efforts to address this, ensuring stakeholders were well-informed and aligned with the program's objectives.

In response to these dire challenges faced by Colega implementers, some strategies were recommended, including focusing on positive outcomes, providing continuous support, and adapting to stakeholders' needs – which are essential for running successful educational programs. Hence, overcoming obstacles in rights-based education requires persistence, flexibility, and a long-term focus. The experiences the implementers share provide valuable lessons for future implementations in overcoming difficulties. These insights help ensure that challenges do not derail the program's progress but instead lead to its growth and refinement.

3.3 The Impact of Colega Teaching Manual in Cagayan de Oro City

Cohen's analysis provides a deeper understanding of how the reported bullying incidents have changed in Cagayan de Oro basic education, highlighting the significant effects of the Colega Teaching Manual. The data reveals a notable decrease in physical bullying incidents, dropping from 172 in 2018-2019 to 42 in 2022-2023, demonstrating a large effect. This suggests that the manual's strategies, including its focus on conflict resolution and educating about rights, have influenced the reduction of physical bullying incidents. These changes reflect how well-designed rights-based programs can transform student behavior, promoting respect and nonviolence.

The number of social bullying incidents sharply decreased from 85 to 28, demonstrating a significant effect size with a Cohen's *d* of 1.37. This provides further evidence that the Colega manual's focus on social and emotional learning and fostering inclusive behaviors played a key role in reducing conflicts arising from misunderstandings. These changes support the idea that rights-based education can help students develop empathy and communication skills, contributing to a healthier social environment within schools.

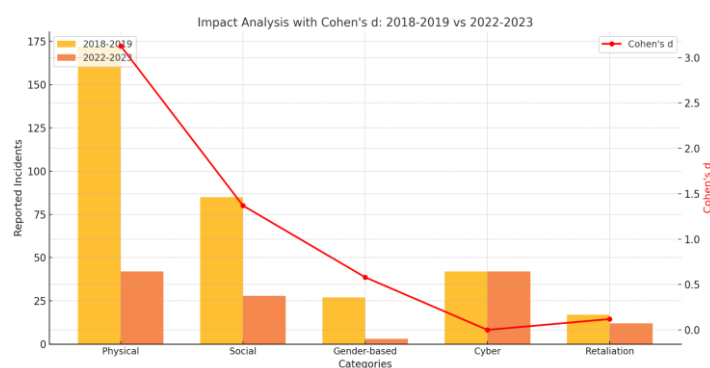


Figure 1. Comparison of bullying incidents in DepEd Cagayan de Oro City

Regarding gender-based bullying incidents, a decrease from 27 to 3 cases resulted in a moderate effect size (Cohen's $d = 0.58$), highlighting the manual's positive impact on promoting gender sensitivity and equality. While the reduction is significant, the effect size is smaller than physical and social bullying incidents, possibly due to ongoing challenges such as underreporting or deeply rooted biases that take time to change. This implies that sustained efforts, like enhancing reporting systems and engaging all stakeholders in promoting gender equality, are necessary to achieve more enduring progress.

Cyberbullying incidents, however, showed no change, with the number remaining at 42. This resulted in a Cohen's d of 0.00, indicating no measurable impact. This indicates a gap in the manual's current coverage of digital safety and online behavior. Expanding the Colega manual to include topics on digital citizenship and addressing cyberbullying is crucial, especially given the increasing role of digital platforms in students' lives. Integrating these relevant elements would align with modern teaching practices emphasizing digital literacy.

Lastly, incidents of retaliation saw a slight increase at the elementary level, with Cohen's d of 0.12 suggesting a minor effect. While the Colega Teaching Manual has been effective in addressing other types of bullying incidents, additional efforts are needed to tackle retaliatory behaviors. Incorporating restorative practices and conflict resolution strategies could help reduce such incidents by addressing underlying issues and promoting reconciliation.

4.0 Conclusion

The Colega Teaching Manual in Cagayan de Oro City has contributed to child rights education and fostered a community that appreciates these rights, aligning with the UN Sustainable Development Goals (SDGs) 10 and 16. SDG 10 aims to reduce inequality, and the Colega Manual supports this by providing marginalized pupils with equal opportunities. The manual's lessons on children's rights have helped pupils understand and recognize their rights, reducing bullying, abuse, and discrimination. As physical and social bullying has decreased, the study demonstrates that the manual has made schools safer and more inclusive. SDG 16 promotes a peaceful, just, and inclusive society, which the Colega Manual actively supports. It fosters respect, nonviolence, and fairness within schools. By promoting rights and responsibilities, the teaching manual contributes to cultivating peace among students. However, challenges such as gender-based violence and cyberbullying persist, highlighting areas for improvement. The manual must be expanded to address these emerging issues and remain effective.

Colega Teaching Manual has contributed to achieving SDGs 10 and 16 by creating a fairer and more harmonious learning environment. Continuous efforts are required to enhance its impact further and ensure its sustainability. To further enhance the impact of the COLEGA Teaching Manual in the Philippine education context, it is recommended that its integration within the educational system be strengthened by collaborating with the Department of Education (DepEd) and the Commission on Higher Education (CHED). DepEd can expand its implementation in basic education, ensuring that all schools, especially in marginalized areas, benefit from its lessons on children's rights. CHED's involvement can support including the COLEGA framework in teacher education programs, preparing future educators to use the manual in their classrooms effectively. Regular training for teachers and community leaders will ensure consistent application of its principles, while monitoring and

evaluation systems can help measure its long-term impact. By focusing on COLEGA's existing strengths and fostering partnerships with key educational agencies, the manual can continue to promote equality, inclusivity, and safety in Philippine schools, significantly contributing to the achievement of SDGs 10 and 16.

5.0 Contributions of Authors

Joel D. Potane served as the main and corresponding author, overseeing the study's conceptualization, supervising the research process, and leading the writing and editing of the manuscript. Jean T. Louquillano contributed to developing the research framework, provided input in writing specific sections, and supported data validation. Kurt S. Candilas focused on data analysis and played a role in reviewing and refining the manuscript.

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7.0 Conflict of Interests

The authors declare no conflicts of interest about the research or its findings.

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Inclusive Education: Navigating the Implementation and Challenges Among Public Elementary Teachers in Las Piñas City, Philippines

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Abstract. This study examined the level of implementation and challenges of inclusive education among public elementary school teachers in the DepEd Division of Las Piñas City. A quantitative research design was used, with data collected from 251 teachers through structured questionnaires and selected via simple random sampling. The findings indicate a high level of inclusive education implementation, particularly in physical infrastructure, teacher attitudes, awareness, and policies. However, significant challenges remain, such as inadequate infrastructure, teacher biases, lack of awareness, and inconsistent policies. Age significantly influenced the level of implementation, while teaching experience affected the challenges encountered. A weak positive correlation was observed between implementation levels and challenges. To address these issues, the "Inclusive Education Excellence Initiative (IEEI)" was proposed, focusing on professional development, infrastructure improvement, and fostering inclusivity. Recommendations include targeted training for younger teachers, expanding current initiatives, and developing comprehensive support systems.

Keywords: Discriminatory policies; Inclusive education; Physical infrastructure; Professional development; Teacher preparedness.

1.0 Introduction

Education is a fundamental right that should be accessible to everyone, regardless of their abilities or disabilities. To provide learning settings that meet the unique requirements of all students, inclusive education has become more and more popular in recent decades. Despite being a widely recognized worldwide objective, inclusive education faces significant obstacles in its successful local implementation, such as in the DepEd Division of Las Piñas City. Inclusive education, as defined by Del Corro-Tiangco as cited by (Cristina Nieves Aligada-Halal, 2020), is an educational practice that integrates students with disabilities into general education classrooms under the supervision of a general education teacher. This approach is rooted in the belief that every child has the inherent right to be educated equally with their peers, irrespective of differences. Despite global initiatives promoting inclusive education, the challenges to its successful implementation persist, particularly in the context of public schools in Las Piñas City.

The Universal Declaration of Human Rights 1948; United Nations Convention on the Rights of the Child 1989; and Education for All Movement, launched in 1990 by the World Bank, UNESCO, UNFPA, and UNICEF, supports

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this notion. This international commitment aims to give all children, youth, and adults access to high-quality basic education. In the Philippines, the 1987 Constitution guarantees the right to education for every Filipino. It stated, "The State shall protect and promote the right of all citizens to quality education at all levels and shall take appropriate steps to make education accessible to all." The right of every Filipino to quality basic education is further emphasized in Republic Act 9155 or the Governance of Basic Education Act of 2001. Along with Republic Act 6655 or the Free Secondary Education Act, these laws reaffirm the policy of the State to protect and promote the rights of all Filipinos by providing children with free and compulsory education at the elementary and high school levels. This idea of inclusive education was introduced by the Department of Education in 2009 through DepEd Order number 72. The Department of Education describes inclusive education in the aforementioned DepEd Order as accepting all children regardless of race, size, shape, color, ability, or disability with support from school staff, students, parents, and the community.

The enactment of House Bill 3311 by the 18th Congress on August 1, 2019, further solidified the notion of inclusive education in the Philippines. Representative Camille A. Villar of Las Piñas City's lone district authored the aforementioned house bill, which is titled "An Act Instituting Inclusive Education, Establishing Inclusive Education Learning Resource Centers for Children and Youth with Special Needs (Cysns) in All Public School Divisions, Providing for Standards and Guidelines, and Appropriating Funds Therefor." The bill aims to establish such centers nationwide for public school divisions serving children and youth with special needs while also satisfying the government's obligations under RA No. 7277, as amended, and the aforementioned constitutional guarantee. The bill recognizes that CYSNs have distinct needs. Thus, it offers learning methodologies and programs that will help them reach their full potential, be properly educated, and be well-prepared for adulthood, community life, and the ability to fit into society.

In line with these legislative endeavors, Republic Act No. 11650 provides additional perspectives and considerations on Inclusive Education. Enacted on March 11, 2022, this legislation underscores the State's policy to protect and promote the right of all citizens to quality education at all levels, particularly recognizing, protecting, and promoting the rights of learners with disabilities, including those from diverse ethnic, religious, or linguistic backgrounds, or indigenous origins. The Act explicitly declares the imperative to make education compulsory and accessible to all learners, ensuring that no one is deprived of the right to access an inclusive, equitable, and quality education. However, with the number of initiatives mentioned, since then, public schools in the country have not truly implemented full inclusive education.

This issue, including the fact that several public schools do not provide special education programs, makes it difficult for children with special needs to exercise their right to receive basic education. According to the Department of Education and Senator Gatchalian's office (Dela Peña, 2023), only 648 of the 13,408 Philippine schools offering Special Education (SPED) programs are designated SPED centers. These include 471 elementary schools and 177 high schools. Alarming, 84 percent of municipalities in the Philippines lack SPED centers. Las Piñas City, a dynamic urban center in the Philippines, holds a unique position within the broader educational context of the country. The local DepEd Division plays a central role in shaping students' educational experiences in the region. As inclusive education strives to ensure that every student, regardless of their background or abilities, has equal access to quality education, it becomes crucial to investigate the impediments hindering its successful implementation in Las Piñas City. Factors such as infrastructure limitations, teachers' attitudes, awareness levels, and policy alignment need thorough exploration to comprehend the intricate dynamics influencing the inclusive education landscape within the city.

Furthermore, understanding these challenges is essential for creating targeted interventions, policies, and practices that foster a truly inclusive educational environment. As the global community continues to emphasize inclusive education, this study will contribute to the broader discourse by shedding light on the specific challenges faced in the Philippines. The research problem addressed in this proposed research is the identification and analysis of the challenges that impede the successful implementation of inclusive education in the public schools within the DepEd Division of Las Piñas City. Despite the global commitment to inclusive education, there is a noticeable gap between policy intentions and on-the-ground realities. This study seeks to bridge this gap by examining the factors hindering the achievement of inclusive education goals at the local level.

2.0 Methodology

2.1 Research Design

The research method employed in this study is a quantitative approach aimed at systematically examining the implementation and challenges of inclusive education in public schools within the DepEd Division of Las Piñas City. A structured questionnaire was developed to collect quantitative data from teachers in these schools. The questionnaire comprised sections addressing demographic information, the level of implementation of inclusive education, and the extent of challenges faced in its implementation. A random sampling technique was used to ensure representation across different school levels and demographics. Data was collected through both online and paper-based surveys, with clear instructions provided to participants to ensure consistency and accuracy of responses. Descriptive statistics was used to analyze the demographic profile of respondents. In contrast, inferential statistics such as t-tests, ANOVA, and correlation analysis were employed to examine potential differences in perceptions based on demographic variables and explore relationships between variables. Ethical considerations were carefully addressed, including obtaining informed consent and ensuring the confidentiality of future participant responses. By employing this quantitative research method, the study aims to provide valuable insights into the implementation and challenges of inclusive education in the specified context, ultimately contributing to enhancing inclusive education practices within the DepEd Division of Las Piñas City.

2.2 Research Locale

This study was conducted in two public elementary schools within the DepEd Division of Las Piñas City, specifically CAA Elementary School and Las Piñas Central Elementary School. These schools are located in District 1 and District 2 of Las Piñas City. The total population of elementary school teachers in the research locale consists of 83 teachers from Las Piñas Central Elementary School and 327 teachers from CAA Elementary School, totaling 410 teachers. These schools were selected due to their prominence and representative nature within the DepEd Division of Las Piñas City, making them ideal sites for examining the implementation of inclusive education practices among elementary school teachers.

2.3 Research Participants

A simple random sampling technique was employed to obtain a representative sample from the target population of public elementary school teachers within District 1 (CAA Elementary School) and District 2 (Las Piñas Central Elementary School) of the DepEd Division of Las Piñas City. This method ensures that each teacher has an equal chance of being included in the sample. A total sample size of 251 teachers was randomly selected from the population of teachers in the two schools. This involved assigning a unique identifier to each teacher and using a random number generator to select the required participants.

To facilitate the data collection process, permission was sought from the division office to conduct the study in both schools and divisions. Once permission is obtained, visits will be made to CAA Elementary School and Las Piñas Central Elementary School to request teachers to participate in the survey until the required number of responses is gathered. Both online and paper-based survey methods were utilized to accommodate participants' preferences. Ethical considerations were carefully addressed throughout the sampling process to protect the rights and confidentiality of participants, including obtaining informed consent and safeguarding privacy and anonymity.

2.4 Research Instrument

The research instrument utilized in this study is a structured questionnaire designed to gather quantitative data from elementary teachers in public schools within Districts 1 and 2 of the DepEd Division of Las Piñas City. The questionnaire is carefully crafted to address the specific research objectives and questions outlined in the study. It consists of multiple sections covering various aspects of inclusive education implementation and challenges. The questionnaire begins with a section on demographic information, including age, sex, highest educational attainment, and years in teaching. This section aims to provide a comprehensive profile of the respondents, enabling the researchers to analyze the data about these demographic variables.

Following the demographic section is the questionnaire for assessing the level of implementation of inclusive education in terms of physical infrastructure, educators' attitudes, awareness levels, and discriminatory policies. The questionnaire is structured using a 4-point Likert scale items with the following range and description: 3.26-

4.00 - Very High, 2.51-3.25 - High, 1.76-2.50 - Low, and 1.00-1.75 - Very Low. The respondents are asked to put a checkmark on the appropriate designated column corresponding to their answer. "Very High" signifies exemplary implementation of inclusive education across various aspects such as physical infrastructure, attitudes of teachers, awareness levels, and discriminatory policies. This level indicates robust systems, significant resources, and widespread positive attitudes or practices. "High" denotes a strong performance with minor areas for improvement, including good infrastructure, positive teacher attitudes, high awareness levels, and minimal discriminatory policies. "Low" suggests efforts towards inclusive education but with significant gaps or shortcomings such as insufficient infrastructure, mixed teacher attitudes, moderate awareness levels, and some discriminatory policies. "Very Low" indicates minimal effort in incorporating inclusive education principles, characterized by inadequate infrastructure, negative teacher attitudes, low awareness levels, and prevalent discriminatory policies hindering inclusive practices.

The third and last section of the instrument is the questionnaire for assessing the extent of challenges teachers face in inclusive education. The questionnaire is similarly structured using a 4-point Likert scale items with the following range and description: 3.26-4.00 - Great Extent, 2.51-3.25 - Moderate Extent, 1.76-2.50 - Low Extent, and 1.00-1.75 - Very Low Extent, allowing respondents to rate the extent with statements related to physical infrastructure, attitudes of teachers, awareness levels, and discriminatory policies. "Very Great Extent" reflects pervasive challenges significantly impeding successful implementation. Major obstacles across various aspects require urgent attention and intervention. "Great Extent" indicates substantial challenges, though not as pervasive as at the "great extent" level. Significant hurdles exist, but they can be addressed effectively with concerted efforts and resources. "Moderate Extent" signifies manageable challenges that do not pose significant barriers to implementation. While difficulties may exist, they can be addressed through targeted strategies and interventions. Lastly, "Less Extent" denotes minimal challenges with little impact on implementation. Although some minor issues may be present, they do not hinder overall progress significantly.

The questionnaire was pre-tested with a small sample of elementary teachers to ensure clarity, comprehensibility, and reliability. Based on the feedback received during the pre-testing phase, any necessary revisions were made to enhance the validity and reliability of the instrument. Overall, the structured questionnaire serves as a systematic and standardized tool for collecting quantitative data from elementary teachers, enabling the researchers to analyze perceptions, identify trends, and draw meaningful conclusions regarding the implementation and challenges of inclusive education within the specified context.

2.5 Data Gathering Procedure

The data-gathering procedure for this study involves a systematic approach to collecting relevant information from all elementary teachers in public schools within Districts 1 and 2 of the DepEd Division of Las Piñas City. Teachers were recruited through school administrators or direct contact after preparing and planning the study, including designing the data collection instrument. Before participation, teachers were provided with informed consent, ensuring their understanding of the research objectives and their voluntary participation. The structured questionnaire was then administered either in person or electronically, with clear instructions provided to participants. Completed questionnaires were securely managed to protect confidentiality, and data analysis was conducted using appropriate statistical techniques. The findings were summarized in a comprehensive report and disseminated through academic publications and presentations to contribute to understanding inclusive education implementation and challenges in Las Piñas City.

2.6 Ethical Considerations

This research study followed ethical guidelines. Participants were informed of their right to withdraw from the study if they experienced discomfort or distress. The study was designed to minimize potential risks, ensuring that participants were protected from physical, social, psychological, and other harm. The dignity and well-being of the participating elementary school teachers were prioritized throughout the research process.

To maintain the confidentiality of the data, all information provided by respondents was securely stored and anonymized. Their rights were rigorously protected, contributing to the preservation of the study's scientific and academic integrity. Additionally, to uphold the highest ethical standards, all results were communicated accurately and transparently, ensuring the research was free from plagiarism or any misconduct.

3.0 Results and Discussion

3.1 Demographic Profile

Based on Table 1, the majority of the respondents in the study are aged between 26-35 years, comprising 34.7% of the total sample. This is followed by teachers aged 36-45, who account for 29.9%. Those aged 46-55 represent 16.3% of the respondents, while the youngest group, aged 25 years or younger, makes up 12.7%. The smallest group is those aged 56 years and above, constituting 6.4% of the respondents. This distribution indicates a predominantly young to middle-aged teaching workforce in the public elementary schools within the division.

Table 1. Demographic profile of the respondents in terms of age

Age	Frequency	Percentage
≤25	32	12.7
26-35	87	34.7
36-45	75	29.9
46-55	41	16.3
≥56	16	6.4

The age distribution of the respondents suggests that younger and mid-career teachers are more prevalent in the teaching workforce in Las Piñas City. This demographic trend is significant in implementing inclusive education, as younger teachers might be more recently trained and, thus, potentially more familiar with contemporary inclusive education practices. Sanahuja et al. (2020) highlight that younger teachers are often more open to adopting innovative and democratic practices in the classroom, which can be crucial for the successful implementation of inclusive education. Conversely, the relatively smaller proportion of teachers aged 56 and above might indicate challenges sustaining experienced mentorship within schools. The diversity in age also suggests varying levels of experience and adaptability among teachers, which could influence the consistency and effectiveness of inclusive education practices across different classrooms. This aligns with the findings of Sanahuja et al. (2020), who noted that teachers' demographic characteristics, including age, play a critical role in shaping their attitudes towards and executing inclusive education.

Table 2 reveals a significant gender disparity in the demographic profile of the study's respondents. The data indicates that 74.1% of the respondents are female, while only 25.9% are male. This suggests that the teaching workforce in the public elementary schools in Las Piñas City is predominantly female. The high percentage of female teachers may reflect broader trends within the education sector, where women typically represent a larger proportion of the teaching population, particularly at the elementary level.

Table 2. Demographic profile of the respondents in terms of sex

Sex	Frequency	Percentage
Male	65	25.9
Female	186	74.1

The predominance of female teachers in the study aligns with existing literature that highlights the gender imbalance within the teaching profession. Zakiah et al. (2021) observe that female teachers often dominate the elementary education sector, a trend seen in various educational systems worldwide. This gender distribution can influence the implementation and challenges of inclusive education, as female teachers may bring different perspectives and approaches to inclusive practices compared to their male counterparts. Additionally, the over-representation of female teachers can impact school dynamics, potentially affecting collaboration and support mechanisms. The findings of Zakiah et al. (2021) corroborate the idea that the success of inclusive education policies often hinges on the attitudes and experiences of the teaching staff, which are shaped by demographic factors such as sex. Understanding this demographic context is crucial for designing professional development programs and support systems that address male and female teachers' specific needs and strengths in promoting inclusive education.

Based on Table 3, the majority of the respondents in the study hold a Bachelor's degree, representing 68.9% of the total sample. Teachers with a Master's degree comprise 31.1%, while no respondents have attained a Doctoral degree. This indicates that while a significant portion of the teaching workforce has pursued graduate-level education, there is a complete absence of doctoral-level qualifications among the respondents. The data suggests that most teachers are equipped with at least a basic level of higher education, with a notable proportion engaging in further studies to enhance their professional qualifications.

Table 3. *Demographic profile of the respondents in terms of highest educational attainment*

Highest Educational Attainment	Frequency	Percentage
Bachelor's Degree	173	68.9
Masteral Degree	78	31.1
Doctoral Degree	0	0

Teachers' educational attainment plays a crucial role in implementing inclusive education. According to Makuya and Sedibe (2021), higher educational qualifications often correlate with a greater understanding and more effective implementation of inclusive education practices. The finding that many teachers in Las Piñas City hold Master's degrees is encouraging, as advanced education can provide teachers with deeper insights into inclusive strategies and pedagogies. However, the absence of doctoral qualifications may highlight a potential gap in the teaching workforce's highest level of expertise and research-based knowledge. Makuya and Sedibe (2021) emphasize that continuous professional development and higher educational attainment are essential in overcoming challenges related to inclusive education. Therefore, while the current educational profile of the teachers is promising, there is room for growth in fostering a culture of lifelong learning and encouraging further academic advancement to support the effective implementation of inclusive education policies.

Based on Table 4, the demographic profile of the respondents in the study reveals a diverse range of teaching experiences among the respondents. The largest group, representing 33.5%, has taught for 6-10 years. This is followed by those with 5 years or less of teaching experience, comprising 26.3% of the respondents. Teachers with 11-15 years of experience account for 21.4%, while those with 16-20 years and more than 20 years of teaching experience represent 10.0% and 8.8%, respectively. This distribution indicates a significant presence of relatively early-career to mid-career teachers, with fewer respondents having long-term teaching experience.

Table 4. *Demographic profile of the respondents in terms of years in teaching*

Years in Teaching	Frequency	Percentage
≤5	66	26.3
6-10	84	33.5
11-15	54	21.4
16-20	25	10.0
≥20	22	8.8

The variety of teaching experiences among respondents can significantly impact the implementation of inclusive education. Sydoriv (2022) highlights that teachers' years of experience play a critical role in their ability to create and sustain an inclusive learning environment. Teachers with 6-10 years of experience, who form the largest group in this study, are often in a crucial phase of their careers where they have gained substantial practical knowledge and are still receptive to new educational strategies. The relatively high percentage of early-career teachers (26.3%) suggests a fresh infusion of new teaching approaches and a potential openness to innovative, inclusive education practices. However, the smaller percentages of those with over 20 years of experience might indicate challenges related to retaining veteran teachers with deep institutional knowledge and experience. Sydoriv (2022) also notes that ongoing professional development is essential for teachers at all stages of their careers to implement inclusive education effectively. This study's findings underscore the need for tailored professional development programs that cater to the varying levels of teaching experience to enhance the overall implementation of inclusive education in public elementary schools.

3.2 Level of Implementation of Inclusive Education

In terms of Physical Infrastructure

Based on Table 5, the level of implementation of inclusive education in the public schools of Las Piñas City, in terms of physical infrastructure, is rated consistently high across all indicators. The accessibility of physical infrastructure for students with disabilities is rated with a weighted mean of 2.98, which falls within the "High" verbal description category. Similarly, the adequacy of current facilities for diverse learners is also rated at 2.98. The effectiveness of the physical layout of classrooms and facilities in supporting the integration of students with special needs is rated identically at 2.98. The equipment of schools with assistive technologies and resources to support inclusive education has a slightly lower weighted mean of 2.94 but still falls within the "High" category. The extent to which modifications are made to the physical environment to accommodate diverse learning needs is rated the highest at 3.06. The overall weighted mean of these indicators is 2.99, indicating a generally high level of implementation regarding the physical infrastructure for inclusive education.

Table 5. *Level of implementation of inclusive education in terms of physical infrastructure*

Indicators	Mean	Description
How would you rate the accessibility of physical infrastructure in your school for students with disabilities?	2.98	High
To what extent do you believe that the current facilities in your school cater adequately to the needs of diverse learners?	2.98	High
How effectively do you think the physical layout of classrooms and facilities supports integrating students with special needs?	2.98	High
In your opinion, how well-equipped is your school with assistive technologies and resources to support inclusive education?	2.94	High
To what extent are modifications made to the physical environment to accommodate diverse learning needs?	3.06	High
Overall Weighted Mean	2.99	High

Legend: 3.26 – 4.00 (Very High), 2.51 – 3.25 (High), 1.76 – 2.50 (Low), 1.00 – 1.75 (Very Low)

The high ratings for the level of implementation of inclusive education in terms of physical infrastructure align with findings from existing literature. Jannah and Hermanto (2022) emphasize that adequate physical infrastructure is crucial for effective inclusive education, particularly during challenging times like the COVID-19 pandemic. Their study highlights that schools with well-designed physical environments are better equipped to meet the diverse needs of students, thereby fostering an inclusive learning atmosphere. Similarly, Putri and Ain (2022) underscore the importance of teacher readiness and the availability of necessary resources, including physical infrastructure, to support inclusive education. The high ratings in the current study suggest that public elementary schools in Las Piñas City are making significant efforts to ensure their physical environments are conducive to inclusive education. These efforts likely contribute to the overall effectiveness of inclusive practices by providing accessible and supportive facilities for all students. The findings highlight the importance of continuous investment in physical infrastructure to maintain and further enhance the implementation of inclusive education practices.

In terms of Attitudes of Teachers

Based on Table 6, the level of implementation of inclusive education in the public schools of Las Piñas City, in terms of teachers' attitudes, is rated very high across all indicators. Educators' overall acceptance and openness towards inclusive education principles are rated with a weighted mean of 3.38, indicating a very high level of acceptance. Educators' empathy and understanding towards students with diverse learning needs have an even higher rating of 3.42. The effectiveness of educators' collaboration and knowledge-sharing to support the inclusion of students with disabilities in regular classrooms is also rated very high, with a weighted mean of 3.37. Similarly, educators' training in handling the diverse needs of students in inclusive settings has a rating of 3.26. Finally, the perception of a culture of inclusivity and respect for diversity among educators is rated with a weighted mean of 3.37. The overall weighted mean for these indicators is 3.36, reflecting a high level of positive attitudes towards inclusive education among teachers.

Table 6. *Level of implementation of inclusive education in terms of attitudes of teachers*

Indicators	Mean	Description
How would you rate educators' overall acceptance and openness towards inclusive education principles in your school?	3.38	Very High
To what extent do you believe educators demonstrate empathy and understanding towards students with diverse learning needs?	3.42	Very High
How effectively do educators collaborate and share knowledge to support the inclusion of students with disabilities in regular classrooms?	3.37	Very High
In your opinion, how well-trained are educators in handling the diverse needs of students in inclusive settings?	3.26	Very High
To what extent do you perceive a culture of inclusivity and respect for diversity among the educators in your school?	3.37	Very High
Overall Weighted Mean	3.36	Very High

The very high ratings for teachers' attitudes towards inclusive education reflect a strong foundation for the successful implementation of inclusive practices in Las Piñas City public schools. Adu (2021) emphasizes that teachers' positive attitudes are crucial for the effective implementation of inclusive education, as they directly influence the classroom environment and the success of inclusive strategies. The findings indicate that teachers in Las Piñas City are highly accepting, empathetic, and collaborative, which are essential qualities for fostering an inclusive educational setting. Anshory and Amelia (2020) also highlight the importance of teacher attitudes, noting that educators' supportive and understanding approach significantly enhances the learning experiences of students with diverse needs. The high ratings in this study suggest that teachers are not only open to inclusive education principles but are also well-trained and proactive in creating a culture of inclusivity and respect for diversity. These positive attitudes are likely to mitigate some of the challenges associated with inclusive education, as supportive and collaborative teachers can better address the needs of all students, ensuring a more effective and inclusive educational experience.

In terms of Awareness Levels

Based on Table 7, the level of implementation of inclusive education in the public schools of Las Piñas City, in terms of awareness levels, is predominantly rated very high across most indicators. The awareness of educators regarding the principles and objectives of inclusive education has the highest weighted mean of 3.42, indicating a very high level of awareness. Educators' understanding of inclusive education practices' legal and ethical implications also falls within the very high category, with a mean of 3.27. The level of being well-informed about the various learning needs and disabilities of students is rated with a mean of 3.36, again reflecting a very high level of awareness. Awareness programs and training sessions promoting inclusive education within schools are rated slightly lower, with a mean of 3.19, which is still considered high. Similarly, the extent to which educators are encouraged to engage in continuous learning and development related to inclusive education has a mean of 3.25, categorized as high. The overall weighted mean of 3.30 signifies a very high level of awareness among educators regarding inclusive education.

Table 7. *Level of implementation of inclusive education in terms of awareness levels*

Indicators	Mean	Description
How aware are educators of the principles and objectives of inclusive education?	3.42	Very High
To what extent do educators understand inclusive education practices' legal and ethical implications?	3.27	Very High
How well-informed are educators about the various learning needs and disabilities of students in their classrooms?	3.36	Very High
How effectively are awareness programs and training sessions conducted to promote inclusive education within your school?	3.19	High
To what extent are educators encouraged to engage in continuous learning and development related to inclusive education?	3.25	High
Overall Weighted Mean	3.30	Very High

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In terms of Discriminatory Policies

Based on Table 8, implementing inclusive education in the public schools of Las Piñas City regarding discriminatory policies reveals a generally very high level of effectiveness in addressing and preventing discrimination. The perception of the prevalence of discriminatory practices or policies against students with disabilities within schools has a weighted mean of 3.08, categorized as high. This indicates that while discriminatory practices are perceived to exist, they are not overwhelmingly prevalent. The extent to which existing school policies support or hinder the inclusion of students with diverse learning needs is rated very high, with a weighted mean of 3.35. Similarly, the effectiveness of enforcing anti-discrimination policies within the school environment is also rated very high, with a mean of 3.30. The responsiveness of school administration in addressing complaints or issues related to discrimination against students with disabilities is rated very high as well, with a mean of 3.29. Lastly, aligning school policies and regulations with national or international standards for inclusive education is rated very high, with a mean of 3.31. The overall weighted mean of 3.27 reflects a very high level of implementation regarding handling discriminatory policies in these schools.

Table 8. *Level of implementation of inclusive education in terms of discriminatory policies*

Indicators	Mean	Description
How prevalent do you perceive discriminatory practices or policies against students with disabilities within your school?	3.08	High
To what extent do existing school policies support or hinder the inclusion of students with diverse learning needs?	3.35	Very High
How effectively are anti-discrimination policies enforced within your school environment?	3.30	Very High
In your opinion, how responsive is the school administration in addressing complaints or issues related to discrimination against students with disabilities?	3.29	Very High
To what extent are policies and regulations aligned with national or international standards for inclusive education?	3.31	Very High
Overall Weighted Mean	3.27	Very High

The findings from the study align with existing literature that emphasizes the importance of robust policies and administrative responsiveness in promoting inclusive education. Koliqi and Zabeli (2021) identify the critical role of non-discriminatory policies in shaping teachers' attitudes towards inclusion, suggesting that supportive policies significantly enhance the inclusivity of educational environments. This study's very high ratings for policy support, enforcement, and administrative responsiveness suggest that Las Piñas City public schools have established a strong framework to combat discrimination and support diverse learning needs. Annah et al. (2023) further corroborate these findings by highlighting that the successful implementation of inclusive education relies heavily on the effectiveness of anti-discrimination policies and the proactive measures taken by school administrations. The perception of a high prevalence of supportive policies and their enforcement indicates a commitment to aligning school practices with both national and international standards for inclusive education, which is crucial for fostering an inclusive school culture. The overall very high level of implementation suggests that while there is room for improvement in eliminating discriminatory practices, significant strides have been made in creating a more inclusive and equitable educational environment in Las Piñas City.

3.3 Challenges of Inclusive Education in the Public Schools

In terms of Physical Infrastructure

Based on Table 9, the extent of challenges related to physical infrastructure in promoting inclusive education in the public schools of Las Piñas City is perceived to be very significant. The lack of accessible infrastructure and inadequate resources are rated with a weighted mean of 3.27, indicating that these issues present a great challenge. The difficulty in modifying existing physical structures to accommodate diverse learning needs is rated slightly higher at 3.31. The condition of physical infrastructure and its impact on the learning experiences of students with disabilities is seen as a significant challenge, with a rating of 3.36. Additionally, the lack of funding affecting the

improvement of physical infrastructure is rated at 3.32, suggesting that financial constraints are a substantial barrier. The overall weighted mean of 3.31 reflects that the challenges related to physical infrastructure are perceived to a very great extent by the teachers in these schools.

Table 9. *Extent of challenges of inclusive education in terms of physical infrastructure*

Indicators	Mean	Description
How greatly do you perceive the lack of accessible infrastructure to be a challenge in promoting inclusive education in your school?	3.27	Very Great Extent
To what extent do inadequate resources hinder the effective implementation of inclusive education practices in your school?	3.27	Very Great Extent
How challenging is modifying existing physical structures to accommodate diverse learning needs?	3.31	Very Great Extent
In your opinion, how significantly does the condition of physical infrastructure impact the learning experiences of students with disabilities?	3.36	Very Great Extent
To what extent does the lack of funding affect the improvement of physical infrastructure to support inclusive education?	3.32	Very Great Extent
Overall Weighted Mean	3.31	Very Great Extent

The findings from this study are corroborated by existing literature, which underscores the importance of physical infrastructure in the successful implementation of inclusive education. Andrews et al. (2019) highlight that inadequate physical infrastructure is a major constraint in promoting inclusive teaching practices. They emphasize that without accessible and adequately resourced physical environments, implementing inclusive education becomes significantly more challenging. Johnson (2023) also notes that the lack of supportive physical infrastructure often hinders teachers' self-efficacy in implementing inclusive practices. The perception of these challenges to a very great extent in Las Piñas City suggests that addressing physical infrastructure deficits is critical for improving inclusive education. The high ratings for challenges related to funding and modifications to existing structures further align with the findings of Andrews et al. (2019), who argue that financial constraints and the inability to adapt current facilities are persistent barriers in many educational settings. These studies collectively emphasize the need for substantial investment and strategic planning to overcome the physical infrastructure challenges, ensuring that all students, regardless of their abilities, have access to a conducive learning environment.

In terms of Attitudes of Teachers

Based on Table 10, the extent of challenges related to teachers' attitudes towards inclusive education in the public schools of Las Piñas City is significant. Resistance or negative attitudes among educators towards inclusive education practices are perceived as a challenge to a great extent, with a weighted mean of 3.23. Biases and stereotypes among educators, which hinder the successful inclusion of students with disabilities, are rated at a very great extent, with a mean of 3.27. Fostering a supportive and inclusive culture among educators is perceived as challenging to a great extent, with a mean of 3.09.

Table 10. *The extent of challenges of inclusive education in terms of the attitudes of teachers*

Indicators	Mean	Description
How greatly do you perceive resistance or negative attitudes among educators towards inclusive education practices to be challenging?	3.23	Great Extent
To what extent do biases and stereotypes among educators hinder the successful inclusion of students with disabilities?	3.27	Very Great Extent
How challenging is it to foster a supportive and inclusive culture among educators in your school?	3.09	Great Extent
In your opinion, how significantly do inadequate training and professional development opportunities contribute to challenges in implementing inclusive education?	3.25	Great Extent
How much do workload and time constraints impact educators' ability to support diverse learners in inclusive classrooms effectively?	3.38	Very Great Extent
Overall Weighted Mean	3.25	Great Extent

Inadequate training and professional development opportunities contributing to challenges in implementing inclusive education are rated greatly, with a mean of 3.25. The impact of workload and time constraints on educators' ability to effectively support diverse learners is perceived to a great extent, with a mean of 3.38. The overall weighted mean of 3.25 indicates that the challenges related to the attitudes of teachers are perceived to a great extent.

The findings of this study align with existing literature on the challenges of inclusive education related to teachers' attitudes. Calderón-Almendros et al. (2020) highlight that resistance and negative attitudes among educators are significant barriers to implementing inclusive practices. The high ratings for biases and stereotypes reflect the findings of Arnaiz Sánchez, De Haro-Rodríguez, and Maldonado Martínez (2019), who emphasize that entrenched biases can severely hinder the inclusion of students with disabilities. The perception that fostering a supportive and inclusive culture among educators is challenging aligns with the broader challenges identified in creating inclusive educational environments. Furthermore, the significance of inadequate training and professional development opportunities as a challenge supports the findings of Arnaiz Sánchez et al. (2019), who stress the need for continuous professional development to equip teachers with the skills necessary for inclusive education. The high rating for the impact of workload and time constraints underscores the practical difficulties teachers face, as highlighted by Calderón-Almendros et al. (2020), who note that additional responsibilities without adequate support can impede teachers' ability to implement inclusive practices effectively. Overall, these findings suggest that addressing teachers' attitudes through comprehensive training and support systems is crucial for overcoming the challenges of inclusive education in Las Piñas City.

In terms of Awareness Levels

Based on Table 11, the extent of challenges related to awareness levels in promoting inclusive education in the public schools of Las Piñas City is notably significant. The lack of awareness about inclusive education principles and practices among educators is a challenge to a great extent, with a weighted mean of 3.27. Similarly, the challenge of disseminating information and raising awareness about inclusive education within the school community is also rated at 3.27, indicating great difficulty. The limited understanding of the diverse needs of students is perceived to hinder the successful implementation of inclusive education to a great extent, with a mean of 3.25. The impact of the lack of support from stakeholders on promoting inclusive education is rated very high, with a mean of 3.28. Lastly, cultural or societal beliefs about disability creating challenges in implementing inclusive education practices are rated very high, with a mean of 3.26. The overall weighted mean of 3.27 indicates that the challenges related to awareness levels are perceived to a very great extent by the teachers in these schools.

Table 11. *The extent of challenges of inclusive education in terms of awareness levels*

Indicators	Mean	Description
How greatly do you perceive the lack of awareness about inclusive education principles and practices among educators to be challenging?	3.27	Very Great Extent
To what extent does the limited understanding of the diverse needs of students hinder the successful implementation of inclusive education?	3.25	Great Extent
How challenging is it to disseminate information and raise awareness about inclusive education within the school community?	3.27	Very Great Extent
In your opinion, how significantly does the lack of support from stakeholders impact efforts to promote inclusive education?	3.28	Very Great Extent
To what extent do cultural or societal beliefs about disability challenge implementing inclusive education practices?	3.26	Very Great Extent
Overall Weighted Mean	3.27	Very Great Extent

The findings align with existing literature that emphasizes the critical role of awareness and understanding in successfully implementing inclusive education. Ediyanto et al. (2023) highlight that a significant barrier to inclusive education is the lack of awareness and understanding among educators regarding inclusive practices and the diverse needs of students. This is consistent with the high ratings for the challenges related to the lack of awareness and dissemination of information in this study. Additionally, Lakkala et al. (2019) identify that limited stakeholder support and prevailing cultural beliefs about disability can significantly impede the promotion of inclusive education. The high ratings for the lack of stakeholder support and cultural challenges reflect these

findings, suggesting that comprehensive awareness programs and stakeholder engagement are essential for overcoming these barriers. To a great extent, the overall perception of these challenges indicates that addressing awareness and understanding is crucial for improving inclusive education in Las Piñas City. Ensuring that educators are well-informed and supported by stakeholders can enhance the implementation of inclusive practices, as supported by both Ediyanto et al. (2023) and Lakkala et al. (2019).

In terms of Discriminatory Policies

Based on Table 12, the extent of challenges related to discriminatory policies in the public schools of Las Piñas City significantly affects the implementation of inclusive education. The perception of discriminatory policies or practices posing a challenge to successful inclusive education is rated with a weighted mean of 3.27, indicating a great extent. Existing policies creating barriers to the inclusion of students with disabilities have a weighted mean of 3.08, reflecting a great extent of challenge. Addressing and overcoming discriminatory attitudes and behaviors within the school environment is also seen as challenging to a great extent, with a mean of 3.25. Inconsistencies or gaps in policy implementation affecting the inclusivity of educational practices are rated with a mean of 3.26, indicating a great extent of challenge. The lack of legal frameworks or enforcement mechanisms contributing to challenges in promoting inclusive education is perceived as a great challenge, with a mean of 3.28. The weighted mean of 3.23 suggests that discriminatory policies pose a great challenge to inclusive education in these schools.

Table 12. *The extent of challenges of inclusive education in terms of discriminatory policies*

Indicators	Mean	Description
How greatly do discriminatory policies or practices challenge the successful implementation of inclusive education in your school?	3.27	Very Great Extent
To what extent do existing policies create barriers to including students with disabilities?	3.08	Great Extent
How challenging is addressing and overcoming discriminatory attitudes and behaviors within the school environment?	3.25	Great Extent
How significantly do inconsistencies or gaps in policy implementation affect the inclusivity of educational practices?	3.26	Very Great Extent
To what extent does the lack of legal frameworks or enforcement mechanisms contribute to challenges in promoting inclusive education?	3.28	Very Great Extent
Overall Weighted Mean	3.23	Great Extent

The findings from this study are consistent with existing literature on the challenges of implementing inclusive education due to discriminatory policies. Asfaruddin et al. (2021) highlight that discriminatory practices and policies are significant obstacles to the effective implementation of inclusive education. Their research indicates that these barriers often stem from deeply ingrained attitudes and insufficient legal frameworks, which align with the high ratings for the challenges posed by discriminatory policies and the lack of enforcement mechanisms in this study. Valdivieso (2020) further supports these findings by emphasizing the critical role of school leadership in addressing discriminatory attitudes and ensuring consistent policy implementation. The perception of inconsistencies or gaps in policy implementation as a significant challenge reflects the need for strong, clear guidelines to support inclusive practices. Valdivieso (2020) also points out that effective inclusive education requires comprehensive legal and policy frameworks that are consistently enforced. The high ratings for the challenges related to legal frameworks and enforcement mechanisms underscore the importance of systemic support in promoting inclusive education. The study's findings highlight the need for targeted interventions to address discriminatory policies and behaviors, ensure consistent policy implementation, and strengthen legal frameworks to support inclusive education in Las Piñas City.

3.4 Difference in the Level of Implementation of Inclusive Education when Grouped According to Profile

Based on Table 13, the analysis of the significant difference in the level of implementation of inclusive education among public elementary teachers in the Division of Las Piñas City, when grouped according to profile, reveals varying results. The computed F value for age is 2.78, which exceeds the critical F value of 2.41, with a p-value of 0.03. This indicates a significant difference in the level of implementation of inclusive education when grouped according to age, leading to the rejection of the null hypothesis. In contrast, the computed T values for sex, highest educational attainment, and years in teaching are -1.63, -1.24, and 1.89, respectively, all of which are less than their corresponding critical T values of 1.98 and 2.41. The p-values for these variables are 0.11 for sex, 0.27 for highest

educational attainment, and 0.11 for years in teaching, indicating that these differences are not statistically significant. Therefore, the null hypothesis is accepted for sex, highest educational attainment, and years in teaching, suggesting no significant difference in the level of implementation of inclusive education based on these profiles.

Table 13. *Significant difference in the level of implementation of inclusive education when grouped according to profile*

Profile	p-value	Decision	Interpretation
Age	0.03	Reject H ₀	Significant
Sex	0.11	Accept H ₀	Not Significant
Highest Educational Attainment	0.27	Accept H ₀	Not Significant
Years in teaching	0.11	Accept H ₀	Not Significant

The significant difference in the level of implementation of inclusive education based on age aligns with existing literature that highlights how age can influence teachers' attitudes and approaches towards inclusive practices. Due to recent training and exposure to contemporary educational practices, Bradshaw and Rose (2021) suggest that younger teachers may be more adaptable and open to inclusive education strategies. This might explain the significant differences observed in this study. On the other hand, the findings that sex, highest educational attainment, and years in teaching do not significantly affect the level of implementation of inclusive education are corroborated by the same study, which emphasizes the importance of ongoing support and professional development for all teachers, regardless of their demographic profiles. Bradshaw and Rose (2021) recommend comprehensive support systems to help teachers implement inclusive education effectively, highlighting that professional growth and implementation success are not solely dependent on demographic factors but on continuous professional development and institutional support. These findings underscore the importance of providing targeted support and training to teachers across all demographic groups to enhance the overall implementation of inclusive education in public schools.

Based on Table 14, the analysis of the significant difference in the extent of challenges of inclusive education among public elementary teachers in the Division of Las Piñas City, when grouped according to profile, shows varied results. For the profile variable of age, the computed F value is 1.73, which is less than the critical F value of 2.41, with a p-value of 0.14. This indicates no significant difference in the extent of challenges based on age, leading to the acceptance of the null hypothesis. Similarly, for sex, the computed T value is -0.20, which is less than the critical T value of 1.98, with a p-value of 0.84. For highest educational attainment, the computed T value is -0.17, which is less than the critical T value of 1.97, with a p-value of 0.86. These findings suggest no significant differences in the extent of challenges based on sex and highest educational attainment, resulting in the acceptance of the null hypothesis for these variables. In contrast, the computed F value for years in teaching is 3.74, which exceeds the critical F value of 2.41, with a p-value of 0.01. This indicates a significant difference in the extent of challenges based on years in teaching, leading to the rejection of the null hypothesis for this profile variable.

Table 14. *Significant difference in the extent of challenges of inclusive education when grouped according to profile*

Profile	p-value	Decision	Interpretation
Age	0.14	Accept H ₀	Not Significant
Sex	0.84	Accept H ₀	Not Significant
Highest Educational Attainment	0.86	Accept H ₀	Not Significant
Years in teaching	0.01	Reject H ₀	Significant

The finding that there is no significant difference in the extent of challenges based on age, sex, and highest educational attainment is consistent with some of the literature suggesting that inclusive education challenges are pervasive and not necessarily dependent on these demographic factors. Ferraioli and Harris (2019) discuss that inclusive education faces universal challenges, such as resource limitations and insufficient training, which can affect teachers regardless of age, sex, or educational background. This highlights the need for systemic solutions to address these challenges comprehensively. However, the significant difference in the extent of challenges based

on years in teaching aligns with literature indicating that experience can impact how teachers perceive and manage the challenges of inclusive education. Ferraioli and Harris (2019) note that more experienced teachers might have developed better strategies for handling inclusive education's complexities or may perceive challenges differently due to their long-term exposure to the educational environment. This suggests that teachers with varying years of experience may require different types of support and professional development to effectively address the challenges they face in implementing inclusive education. Overall, these findings emphasize the importance of tailoring support and interventions to the specific needs of teachers based on their years of experience to enhance the effectiveness of inclusive education practices in Las Piñas City.

Based on Table 15, the analysis shows a significant relationship between the level of implementation and the extent of challenges of inclusive education among public elementary teachers in the Division of Las Piñas City. The computed r value is 0.2538, which indicates a very low positive correlation between the level of implementation and the extent of challenges. Despite the low correlation, the p -value is 0.00, less than the alpha level of 0.05, suggesting that the relationship is statistically significant. This means that as the level of implementation of inclusive education increases, the extent of challenges experienced also slightly increases, albeit the correlation is weak.

Table 15. *Significant relationship between the level of implementation and the extent of challenges of inclusive education*

Level	Extent	r value	P value	Remarks	Decision
Implementation of inclusive education	Challenges of inclusive education	0.2538	0.00	Very Low Positive Correlation	Significant

The findings of this study are consistent with the literature, which suggests that the relationship between the implementation of inclusive education and the challenges faced is complex. Mertens et al. (2020) highlight that implementing inclusive education often brings to light various challenges previously unaddressed, such as the need for more resources, teacher training, and adjustments in teaching strategies. This might explain the positive correlation observed in this study, where improvements in implementation also reveal more areas that need attention and improvement. Waddington and Reed (2019) further support this notion by discussing how using digital technology in inclusive education, while beneficial, also introduces new challenges, such as the need for ongoing teacher training and access to appropriate technological resources. This dual effect of implementation - bringing both progress and new challenges - is reflected in the low positive correlation found in the study. Although the correlation is weak, the significance of the relationship indicates that comprehensive support systems should accompany efforts to implement inclusive education to address emerging challenges. This includes continuous professional development for teachers, adequate funding, and infrastructure improvements to ensure that inclusive education can be sustained and effective.

4.0 Conclusion

Based on the findings, it can be concluded that most respondents are younger female teachers, predominantly holding a Bachelor's degree and possessing 6-10 years of teaching experience. The implementation of inclusive education is generally rated high, particularly in areas such as physical infrastructure, teachers' positive attitudes, high awareness levels, and strong policy support against discrimination. However, significant challenges remain, including inadequate physical infrastructure, resistance and biases among teachers, lack of awareness and stakeholder support, and issues with discriminatory policies. The level of implementation of inclusive education significantly varies with age but not with sex, educational attainment, or years in teaching. Additionally, while the extent of challenges does not significantly differ by age, sex, or educational attainment, more experienced teachers perceive greater challenges. There is a significant, though very low, positive correlation between the level of implementation and the extent of challenges of inclusive education. These findings contribute to the existing body of knowledge by highlighting the critical role of teacher demographics in implementing inclusive education and the persistent challenges that hinder its effectiveness. The study underscores the need for targeted interventions to address these challenges, particularly through the proposed IEEI program, which aims to improve teacher preparedness, upgrade physical infrastructure, and foster inclusivity through professional development and policy reforms. Future research could explore the effectiveness of the IEEI program in various educational

contexts, investigate additional factors influencing the implementation of inclusive education, and examine long-term outcomes for students and teachers involved in such initiatives.

5.0 Contributions of Authors

As the sole author of this research, The researcher was responsible for all aspects of the study, including conceptualization, data collection, analysis, writing, editing, and finalizing the manuscript.

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7.0 Conflict of Interests

The author declares that there is no conflict of interest regarding the publication of this research.

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Error Analysis in First-Year AB English Language Students' Written Compositions

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Abstract. This study addresses the gap in understanding grammatical errors in English compositions among first-year ABEL (Bachelor of Arts in English Language) students at Pangasinan State University – Urdaneta City Campus during the academic year 2022-2023. The objectives include identifying the demographic profile of the students regarding their mother tongue and attitudes toward English grammar and writing, analyzing the most common grammatical errors using the Surface Strategy Taxonomy, exploring the relationship between errors and profile variables, and determining the causes of these errors. A mixed-method research design was employed, with data collected through a researcher-made questionnaire administered via Google Forms and face-to-face writing compositions about students' experiences during the pandemic. Findings revealed that the majority of respondents (60%) spoke Tagalog as their mother tongue, demonstrating a highly favorable attitude toward English grammar learning (mean score of 3.40) and a moderately favorable attitude toward English writing (mean score of 3.00). The most frequent grammatical error identified was misformation (40.69%), followed by omission (32.19%), addition (25.86%), and misordering (1.27%). Results showed no significant relationship between the errors and demographic profile variables. Semi-structured interviews with ten participants confirmed interlingual interference as a significant factor influencing errors, highlighting challenges transitioning from the student's mother tongue to English. The findings emphasize the need for targeted grammar instruction to enhance independent learning and student outcomes. Practical recommendations include integrating interactive grammar activities, personalized feedback mechanisms, and mother tongue awareness strategies into ESL instruction to address persistent error patterns effectively.

Keywords: English written compositions; Error analysis; Grammatical errors; Interlingual interference; Surface strategy taxonomy

1.0 Introduction

Mastering English grammar poses ongoing challenges for ESL (English as a Second Language) learners, particularly in multilingual contexts like the Philippines. Grammatical accuracy in writing is crucial, as errors reflect students' linguistic development and specific areas requiring improvement, according to Ellis and Barkhuizen (2005), as cited in Meunier (2006). This study aims to investigate the types and causes of grammatical errors committed by first-year ABEL (Bachelor of Arts in English Language) students at Pangasinan State University, Urdaneta City Campus, focusing on the influence of interlingual interference from students' native languages, such as Tagalog, as well as their attitudes toward learning English grammar and writing.

Corder (1967) emphasizes that errors are natural components of language learning, providing opportunities for educators to diagnose and address learner difficulties. Bialystok et al. (1983) offer a practical framework for analyzing these errors through their Surface Strategy Taxonomy, which categorizes errors into omission, addition, misformation, and misordering. This taxonomy is particularly suited to this study's objectives as it systematically classifies error patterns, enabling a deeper understanding of interlingual and intralingual influences on writing proficiency.

The increasing reliance on digital tools like Grammarly has introduced another dimension to grammatical mastery. While these tools offer convenience and immediate correction, Javier (2022) highlights concerns about their potential to foster overdependence, which may hinder students' independent learning and grammatical development. This study builds on such observations by examining whether similar tendencies are evident among the target population, thereby linking technological reliance to broader grammatical challenges.

Previous research provides valuable context for understanding error patterns in ESL learners. Al-Dubib (2013) identified subject-verb agreement difficulties among Saudi students, while Mendoza (2016) explored interlingual and intralingual errors among Filipino learners, emphasizing native language interference. Similarly, Ramos (2019) highlighted recurring issues in sentence construction and verb usage among Filipino students, stressing the need for targeted grammar instruction. These studies underscore the global relevance of error analysis while offering insights into the specific challenges ESL learners face in different settings. However, the focus on first-year ABEL students and their unique linguistic and attitudinal profiles remains underexplored, representing a critical gap this study seeks to address.

The study adopts a conceptual framework that examines the relationship between students' demographic profiles—such as mother tongue and attitudes toward grammar learning—and the frequency and types of grammatical errors they commit. By integrating Bialystok et al.'s taxonomy, this approach systematically categorizes errors and investigates the role of interlingual interference in shaping writing outcomes. This framework aligns closely with the study's goal of identifying actionable insights to enhance ESL instructional strategies, such as developing more focused grammar lessons and fostering greater student learning independence. By bridging these gaps, the study improves English grammar instruction for first-year ABEL students, offering evidence-based recommendations for educators to address persistent error patterns effectively.

2.0 Methodology

2.1 Research Design

The study employed a mixed-method design, combining descriptive-correlational analysis with qualitative interviews. This approach was chosen because it allowed for a comprehensive examination of quantitative patterns (e.g., error types and correlations) and qualitative insights into the causes of these errors, providing a more holistic understanding of the research problem. Quantitative data were collected through demographic profiles, including participants' mother tongues, attitudes toward English grammar learning and writing, an error analysis of essays, and the correlation between their errors and profile variables. Meanwhile, the interviews provided insights into the causes of grammatical errors.

2.2 Research Locale

The study was conducted at Pangasinan State University, Urdaneta City Campus, Urdaneta City, Pangasinan, during the first semester of the academic year 2022–2023.

2.3 Research Participants

The participants consisted of thirty-five (35) first-year ABEL students, representing half of the total enrolled population, who were selected randomly. Random selection was done by assigning a unique identifier to each student in the population and then using a random number generator to ensure impartiality. Additionally, ten (10) students participated in semi-structured interviews to identify the causes of their grammatical errors. These interview participants were selected based on their diverse language profiles and error patterns to ensure a variety of perspectives. Data saturation was reached when recurring themes emerged, confirming that no new information would be gained through further interviews.

2.4 Research Instrument

The study utilized a researcher-made questionnaire divided into two parts. The first section gathered data on the respondents' profiles, including a) mother tongue, b) attitudes toward English grammar learning, and c) attitudes toward English writing. This section contained ten indicators for each attitude area, reflecting the respondents' perspectives. The second section involved an essay writing task, where respondents were asked to write about "The Impact of the COVID-19 Pandemic on My Life as a Student." These written essays served as the basis for error analysis, conducted using Bialystok et al.'s (1983) Surface Strategy Taxonomy, focusing on errors of omission, addition, misinformation, and misordering.

For the semi-structured interviews, participants were asked open-ended questions such as, "What challenges do you experience when writing in English?" and "How does your mother tongue affect your English grammar?" Follow-up questions varied depending on the participants' responses, ensuring a detailed exploration of their experiences.

2.5 Data Gathering Procedure

The researchers obtained approval from concerned university officials, including the campus executive director, college dean, program chair, and the respondents' instructor. Consent was secured from the respondents through the efforts of the class mayors. Data collection involved administering questionnaires online via Google Forms for the demographic profiles, while essay writing was conducted face-to-face.

The semi-structured interviews with ten students were held through Microsoft Teams. While online platforms facilitated accessibility, minor challenges such as scheduling conflicts and intermittent internet connectivity were addressed by allowing participants to reschedule sessions and use alternative devices if needed. During the interviews, follow-up questions were asked as needed to gain deeper insights into the participants' experiences and contributing factors.

2.6 Ethical Considerations

The researchers adhered to established ethical guidelines by obtaining approval from university authorities, including the campus executive director, college dean, program chair, and the respondents' instructor. All participants were informed and consented to ensure they were fully aware of the study's purpose, procedures, and rights. Measures were implemented to protect participants' anonymity and confidentiality, including using code numbers for responses and secure storage of all data throughout the research process.

3.0 Results and Discussion

3.1 Profile of the Respondents

As shown in Table 1, the majority of respondents (60%) speak Tagalog, followed by Iloco (31.4%) and Pangasinan (8.6%). This linguistic distribution suggests that the predominance of Tagalog may influence students' grammatical errors through interlingual interference. As Mendoza (2016) highlighted, learners often apply rules and structures from their native languages to English, resulting in errors such as misusing prepositions, articles, and word order.

Table 1. *Mother tongue distribution of respondents*

Mother Tongue	Frequency	Percentage (%)
Tagalog	21	60.0
Iloco	11	31.4
Pangasinan	3	8.60
Others	0	0.00

For example, Tagalog's verb-initial sentence structure (V-S-O) contrasts with English's subject-verb-object (S-V-O) order, potentially leading to misordering errors (Garcia et al., 2018). Similarly, Pangasinan and Iloco speakers might experience interference due to their languages' unique morphosyntactic features, affecting word formation and grammar. This aligns with Malana's (2018) findings that the L1 of Filipino learners significantly affects their English proficiency, particularly in grammar and pronunciation. Addressing these influences through explicit instruction in English syntax and grammatical structures is critical for reducing errors linked to mother tongue interference.

3.2 Attitude towards English Grammar Learning

The respondents demonstrate a generally favorable attitude toward learning English grammar, with an overall mean score of 3.40 (see Table 2). This aligns with Kholik et al.'s (n.d.) observation that a positive attitude toward grammar learning correlates with better writing performance. Notably, the highest mean score (3.71) reflects enthusiasm for discovering new grammar concepts, suggesting that interactive and engaging teaching methods could further enhance learning outcomes.

Table 2. *Attitude toward English grammar learning*

Indicators	Mean	Interpretation
1 I encourage myself to study English grammar, although it makes me uncomfortable because there are numerous rules to follow.	3.2	Moderately Favorable
2 I pay more attention to learning English grammar since it helps me improve my ability to use English and perform better in class.	3.57	Highly Favorable
3 I feel fulfilled whenever I have a chance to apply what I have learned in English grammar to tasks that require the use of English.	3.54	Highly Favorable
4 I am delighted and proud that English grammar has helped me improve my communication skills in English.	3.57	Highly Favorable
5 I feel happy and fulfilled whenever I learn something new about English grammar.	3.71	Highly Favorable
6 I enjoy learning English grammar because it develops my reading, listening, writing, and speaking abilities.	3.63	Highly Favorable
7 I enjoy learning English grammar, especially through engaging and enjoyable activities such as games, stories, songs, role plays, videos, and problem-solving activities, because they help me reduce my anxiety.	3.37	Highly Favorable
8 I am more confident in understanding spoken and written English contexts now that I have learned the fundamentals or basics of English grammar.	3.14	Moderately Favorable
9 I am more inclined to express myself in English now that I understand the fundamentals or basics of English grammar.	3.23	Moderately Favorable
10 I avoid using grammar checker applications like Grammarly because, more often than not, such applications only make learners dependent on them.	3.03	Moderately Favorable
Overall Mean	3.40	Highly Favorable

Ramos (2019) emphasized the importance of innovative teaching approaches, such as games and role-playing, in sustaining students' interest and reducing anxiety. Respondents' preference for such methods supports this notion and highlights the need to incorporate interactive activities into grammar instruction. However, moderate scores in confidence-related indicators (e.g., using grammar independently without tools like Grammarly, mean = 3.03) suggest an opportunity for educators to foster greater learner autonomy.

Respondents exhibit a moderately favorable attitude toward English writing, with an overall mean score of 3.00 (see Table 3). While the highest mean score (3.29) reflects the belief that understanding writing principles aids focus, lower scores in confidence-related indicators (e.g., sharing written work, mean = 2.71) suggest lingering anxiety and hesitation.

Table 3. *Attitude toward English writing*

Indicators	Mean	Interpretation
1 I take confidence that developing English writing will be a significant skill, although it is the most challenging area of language learning.	3.23	Moderately Favorable
2 I keep myself focused whenever I write in English because I believe I have sufficient knowledge of English writing principles.	3.29	Highly Favorable
3 I always find ways to broaden my English vocabulary because it is essential in English writing.	3.26	Highly Favorable
4 I usually consult writing assistant software like Grammarly only after writing English compositions.	2.91	Moderately Favorable
5 I feel confident when someone reads my English-written compositions.	2.71	Moderately Favorable
6 I also try to develop my love for reading because I believe it is one way to make me a good writer.	3.26	Highly Favorable
7 I usually write my thoughts using my first language and then translate them into English before writing.	2.71	Moderately Favorable
8 I keep a diary of my own as a part of self-training, in which I write about my daily activities, unforgettable experiences, and the like using English.	2.71	Moderately Favorable
9 I am passionate about developing my English writing skills to help me become a good writer.	3.23	Moderately Favorable
10 I envision myself joining an English writing contest or organization requiring English writing, such as a school paper, because I have been working on developing my English writing skills.	2.66	Moderately Favorable
Overall Mean	3.00	Moderately Favorable

These findings align with Ramos' (2019) observation that learners often struggle with confidence in writing due to fear of making errors or being judged. Furthermore, Kholik et al. (n.d.) noted that self-esteem plays a significant role in writing performance, suggesting that building students' confidence through supportive environments and constructive feedback is essential. Interactive strategies, such as peer reviews and scaffolded writing exercises, could help address these challenges by allowing learners to improve incrementally.

3.3 Grammatical Errors Identified

As shown in Table 4, the analysis revealed four types of grammatical errors, with misformation errors being the most prevalent (40.69%), followed by omission errors (32.19%) and addition errors (25.86%). Misordering errors were the least frequent, accounting for only 1.27% of the total. These results align with Mendoza's (2016) findings, which identified intralingual and interlingual interference as significant contributors to errors in English writing. Similarly, Bialystok et al. (1983) state that surface strategy taxonomy categorizes errors as reflective of learners' developmental stages and challenges in adapting to the grammatical structures of the target language.

Table 4. *Frequency of grammatical errors*

Error Type	Frequency	Percentage (%)
Misformation	225	40.6
Omission	178	32.2
Addition	143	25.8
Misordering	7	1.27

Misformation errors, the most frequent type (40.69% of all errors), are particularly prevalent in misusing prepositions, verb forms, and tenses. Table 5 shows that preposition errors account for 16.46% of all errors, making them the most common type of misformation. This finding reflects the complexity and subtlety of preposition usage in English, a challenge frequently highlighted in second-language learning research (Bialystok et al., 1983; Harun & Sufian, 2018).

Table 5. *Misformation errors*

Misformation Errors	Frequency	Percentage (%)
Misformation of Preposition	91	16.4
Misformation of Verb Form	48	8.68
Misformation of Tense	30	5.42
Misformation of Grammatical Number	19	3.44
Misformation of Pronoun	16	2.89
Misformation of Conjunction	8	1.45
Misformation of Article	6	1.08
Misformation of Noun Instead of Adjective	2	0.36
Misformation of Determiner Instead of Adverb	2	0.36
Misformation of Verb Instead of Adjective	1	0.18
Misformation of Adjective Instead of Adverb	1	0.18
Misformation of Adjective Instead of Noun	1	0.18

The high incidence of misformation errors indicates difficulties in applying the correct forms of lexical or grammatical elements. For instance, errors in verb forms and tenses suggest an incomplete understanding of English conjugation rules, consistent with Royani and Sadiyah's (2019) findings on learners' struggles with mastering verb usage. Furthermore, L1 interference plays a significant role, particularly in misusing prepositions. Filipino language structures often omit or substitute prepositions in ways that are not directly transferable to English, leading to errors (Garcia et al., 2018). Addressing these challenges requires targeted instruction focusing on prepositions and verb usage, emphasizing contextual understanding and practice.

Omission errors, comprising 32.19% of the total, were most commonly associated with missing articles and prepositions (see Table 6). These omissions often stem from students' reliance on simpler sentence structures and their tendency to overlook grammatical nuances, a pattern frequently observed in the early stages of second-language acquisition (Meunier, 2006).

Table 6. Omission Errors

Omission errors	Frequency	Percentage (%)
Omission of article	74	13.3
Omission of preposition	31	5.61
Omission of -s/es noun inflection in plural form	29	5.24
Omission of conjunction	17	3.07
Omission of -s/es verb inflection	7	1.27
Omission of linking verb	5	0.90
Omission of auxiliary verb	5	0.90
Omission of -ing verb inflection after preposition	2	0.36
Omission of pronoun	2	0.36
Omission of -ing verb inflection after adverb	1	0.18
Omission of -ing verb inflection after noun	1	0.18
Omission of -ing verb inflection after adjective	1	0.18
Omission of -ing verb inflection after conjunction	1	0.18
Omission of subject	1	0.18
Omission of noun	1	0.18

Such errors highlight learners' grammatical knowledge gaps, particularly regarding functional elements like articles and prepositions. Mendoza (2016) attributed this issue to intralingual interference, where learners simplify structures or fail to apply grammatical rules fully. For instance, the absence of articles often reflects L1 transfer, as articles are not obligatory in Tagalog sentence structures (FilipinoPod101, 2020). These findings underscore the developmental nature of omission errors, where learners' efforts to internalize target language rules result in simplifications. Addressing these gaps requires instruction reinforcing the importance of functional words in sentence construction, providing ample practice and corrective feedback to improve learners' proficiency.

Addition errors, accounting for 25.86% of the total, often involve the unnecessary inclusion of prepositions and articles (see Table 7). These errors suggest overgeneralizing language rules, where learners apply grammatical patterns beyond appropriate contexts or direct translation from their native language.

Table 7. Addition errors

Addition errors	Frequency	Percentage (%)
Addition of preposition	44	7.96
Addition of article	42	7.59
Addition of -s/es noun inflection in singular form	10	1.81
Addition of conjunction	9	1.63
Addition of auxiliary verb	7	1.27
Addition of -s/es verb inflection	4	0.72
Addition of personal possessive pronoun	4	0.72
Addition of subjective personal pronoun	3	0.54
Addition of personal pronoun	3	0.54
Addition of particle	3	0.54
Addition of objective personal pronoun	2	0.36
Addition of interrogative pronoun	2	0.36
Addition of linking verb	2	0.36
Addition of modal auxiliary verb	2	0.36
Addition of reflexive pronoun	1	0.18
Addition of generic personal pronoun	1	0.18
Addition of demonstrative pronoun	1	0.18
Addition of irregular verb	1	0.18
Addition of -ly adverbial derivation marker	1	0.18
Addition of -ing verb inflection	1	0.18

Such errors reflect learners' attempts to replicate English patterns they have memorized without fully understanding their application, as Heydari and Bagheri (2012) observed. James (1998) also highlighted overgeneralization as a common developmental issue among second-language learners. For example, adding redundant prepositions or articles may arise from learners misinterpreting Filipino sentence structures, where such elements are either used differently or are optional (Garcia et al., 2018). Addressing these challenges requires explicit instruction on English sentence structures and targeted practice to identify and correct overgeneralization tendencies. By focusing on these pitfalls, learners can better understand when grammatical elements are necessary.

Misordering errors, the least frequent type at 1.27% of the total, primarily involved the misplacement of adverbs and prepositions (see Table 8). Although rare, these errors can significantly impact sentence clarity, underscoring the need for targeted practice in sentence structure.

Table 8. *Misordering errors*

Misordering errors	Frequency	Percentage (%)
Misplacement of adverb	3	0.54
Misplacement of preposition	2	0.36
Misplacement of verb	2	0.36

These errors often stem from L1 interference, as Filipino sentences commonly follow a verb-subject-object (V-S-O) order, in contrast to the subject-verb-object (S-V-O) structure of English (Garcia et al., 2018). Learners unfamiliar with English syntax may misplace elements, confusing and disrupting sentence flow. The Surface Strategy Taxonomy (Bialystok et al., 1983) identifies misordering as a reflection of learners' difficulty adapting to the syntactic rules of the target language. To address this, educators should prioritize sentence construction exercises emphasizing English word order and provide consistent feedback to help learners internalize correct structures.

3.4 Relationship Between Profile and Errors

Statistical analysis revealed no significant relationship between the respondents' demographic profiles (mother tongue, attitude toward grammar, and attitude toward writing) and their error rates in writing. The p-values for all tested variables exceeded 0.05, leading to the acceptance of the null hypothesis. Although slight trends were observed—such as a modest correlation between Tagalog speakers and misinformation errors—these were not statistically significant (see Table 9).

Table 9. *Correlation between demographic profile and errors*

Variables			Omission	Addition	Misinformation	Misordering	Total
Mother Tongue	Iloco	Point-Biserial Correlation	-0.234	-0.060	-0.268	-0.118	-0.277
		Sig. (2-tailed)	0.176	0.733	0.120	0.498	0.108
	Tagalog	Point-Biserial Correlation	0.258	-0.015	0.334	0.168	0.295
		Sig. (2-tailed)	0.135	0.930	0.0499	0.334	0.085
	Pangasinan	Point-Biserial Correlation	-0.063	0.126	-0.140	-0.098	-0.058
		Sig. (2-tailed)	0.720	0.470	0.421	0.574	0.741
Attitude toward English Grammar Learning		Pearson Correlation	-0.010	0.043	0.267	-0.098	0.137
		Sig. (2-tailed)	0.957	0.804	0.121	0.574	0.433
Attitude toward English Writing		Pearson Correlation	0.052	0.101	0.169	0.014	0.149
		Sig. (2-tailed)	0.768	0.564	0.331	0.936	0.393

This lack of significant correlation suggests that demographic factors like mother tongue and attitudes alone may not directly influence the frequency of grammatical errors. Similar findings were reported by Malana (2018), who observed that Ilocano, Ibanag, and Itawes students showed no significant differences in written proficiency despite their varying linguistic backgrounds. This reinforces the idea that interlanguage factors and individual learner experiences may have a more substantial impact than demographic variables. Additionally, the results align with Mendoza's (2016) assertion that while L1 interference can contribute to errors, intralingual factors, such as insufficient mastery of grammatical rules, play a more dominant role. The lack of correlation between attitudes and error rates may also reflect findings by Kholik et al. (n.d.), who emphasized the interplay of motivation, self-esteem, and external influences on language performance, suggesting that attitudes alone may not guarantee improved proficiency.

The findings further support Ramos' (2019) recommendation for a holistic approach to grammar instruction. Individual factors like exposure to English, access to quality teaching methods, and personalized learning experiences could be more significant determinants of writing proficiency. For instance, Mendoza's (2016) research underscores the importance of addressing intralingual errors through targeted instruction that builds grammatical competency. Similarly, Garcia et al. (2018) highlighted the role of consistent voice marking and morphosyntactic reinforcement in language acquisition.

These findings suggest that future studies should explore other potential factors affecting writing proficiency, such as teaching strategies, learning environments, and individual learner characteristics, to develop more comprehensive and effective interventions in grammar instruction.

3.5 Causes of Grammatical Errors

The causes of grammatical errors can be categorized into interlingual and intralingual interference, internal factors, and external influences (see Table 10).

Table 10. *Common causes of the respondents' grammatical errors*

Themes	Subthemes	Responses
Interlingual Interference	Non-Native Speaker	R10: Well, I am not a native. That is one.
	Difficulty in interlingual translation	R8: There are words and phrases that I can't translate in English minsan and it frustrates me kasi ang gaganda ng terms sa tagalog pero hindi mo pwede itranslate sa English. Katulad nung word na "nakakapanibago" pero walang word para dun..."refreshing," parang hindi ko feel na yun yung tamang term.
	Incorporation of slang terms in second language acquisition	R1: Yes, because sometimes I tend to use Ilocano slang words like "kwan," "ganun," and "garud" in Tagalog, and even in the English language, I tend to mix it up. My friends get confused about the meaning of these experiences.
	Incorporation of first language pronunciation into second language acquisition	R10: In speaking, yes. Since I am Tagalog and we also practice Ilocano, sometimes I have problems with my short "i" and long "i" sounds.
Intralingual Interference	Unconscious Code-Switching	R2: Kapag nagsasalita minsan po straight in English po ako nag-eexplain kay teacher tapos bigla po akong madudulas into Ilocano.
	Dominance of First Language in the Environment	R2: Kasi po Ilocano po ang both parents ko po. In our household, they usually command using Ilocano. My mother tongue interferes with my speaking and writing in English.
	Poor Grammar	R2: At the start po, especially po learning English, I mean lahat po kung magle-learn po tayo ng language yun po (grammar) yung unang-una pong difficulty natin.
	Unfamiliarity with Subject-Verb Agreement	R2: Remind me po kung ano ang SVA.
Internal Factors Affecting Writing	Word Formation Errors	R1: Maybe what words should I use in the proper structure of the sentence that should be formal, or should it appear formal or casual?
	Lack of Vocabulary	R4: Yes. Lack of knowledge. When I am writing an essay, I am only using light words. It is really hard for me.
	Reading Laziness	R4: I do not read books every day. It is a lack of knowledge, and I think I need to study more to learn everything when I study. That is hard for me because I am lazy at reading.
	Lack of Motivation to Study	R5: The lack of motivation to learn more about the subject.
External Factors Affecting Writing	Lack of Self-Expression in Writing	R3: Sometimes, when I'm writing something that I feel, I cannot express it, and sometimes it turns out so ugly, you know, like when I want to express something but don't know how to write it.
	Mood Dictates Writing	R10: the problem with writing is that it comes in my mood. Sometimes, you do not have that creative juice, right?
	Negative Effect of Perfectionism on Writing	R3: I always want perfection, so I don't want bad grammar, so I always check it, and it's difficult when you're a perfectionist.
	Peer Bullying	R8: I think there is a stigma that follows writing if you cannot speak English fluently or express yourself fluently, you will be made fun of by your peers.

Interlingual Interference

Interlingual interference emerges as a primary source of grammatical errors, driven by the influence of students' native languages (Tagalog, Iloco, and Pangasinan) on their English writing. Challenges in translating culturally specific words, such as nakakapanibago (loosely translated as "refreshing"), illustrate how linguistic gaps between languages complicate the learning process. Additionally, errors related to slang incorporation, code-switching, and pronunciation issues further underscore the impact of first-language interference. This aligns with Mendoza's (2016) findings, which identified interlingual interference as a significant contributor to grammatical errors, mainly when learners directly apply L1 rules to English. Similarly, Garcia et al. (2018) highlighted that Tagalog's flexible word order and unique morphosyntactic markers often lead to misalignment with English grammatical structures, increasing the likelihood of errors.

Intralingual Interference

Intralingual interference stems from learners' incomplete understanding of English grammar rules, particularly in subject-verb agreement, verb conjugation, and word formation. Respondents in the study noted difficulties with vocabulary, which compounded their challenges in constructing grammatically correct sentences. These findings resonate with Heydari and Bagheri's (2012) observation that limited exposure to and practice in formal English writing often results in overgeneralization and partial application of rules. Royani and Sadiah (2019) also highlighted intralingual factors as key contributors to verb agreement and sentence structure errors, emphasizing the need for sustained grammar instruction to help learners internalize rules effectively. These findings suggest that while interlingual interference accounts for some errors, intralingual factors play an equally critical role in students' grammatical challenges.

Internal and External Factors

Internal factors, such as lack of motivation, difficulty with self-expression, and emotional dependence on mood, further exacerbate writing difficulties. Respondents shared that these factors often affect the quality and clarity of their output, echoing Kholik et al.'s (n.d.) assertion that motivation and self-esteem significantly influence writing performance. Similarly, Ramos (2019) identified perfectionism and fear of making mistakes as barriers to effective learning, leading to heightened anxiety and reduced willingness to take risks in writing. External factors, including peer bullying and societal stigma surrounding non-fluent English speakers, negatively impact learners' confidence and motivation. Malana (2018) observed that such external pressures can discourage students from fully engaging in writing activities, further limiting their progress. These findings align with Taylor's (2019) emphasis on the influence of perceptions on performance, highlighting the importance of fostering a supportive environment to counteract these negative influences. The causes of grammatical errors are multifaceted, involving interlingual and intralingual interference and internal and external factors. Addressing these issues requires a comprehensive approach, including targeted grammar instruction, vocabulary-building exercises, and supportive learning environments that foster motivation and self-confidence. Future efforts should consider integrating these strategies into curricula to mitigate these challenges and enhance students' writing proficiency.

4.0 Conclusion

This study provides valuable insights into the grammatical performance of ABEL freshmen, particularly among Tagalog-speaking students. It highlights the prevalence of Tagalog as the mother tongue and reveals that students generally exhibit positive attitudes toward English grammar learning and writing. Students recognize the significance of grammar in improving communication and academic performance, demonstrating enthusiasm for interactive and engaging learning methods like role-playing and games. However, some areas, such as confidence in applying grammar basics, require additional instructional support to strengthen their learning experience. Students show a moderately favorable attitude in terms of writing, valuing the importance of foundational writing principles and vocabulary development. However, challenges such as low confidence in sharing written work highlight the need for interventions to build their self-assurance and reduce writing-related anxiety.

The study identifies frequent grammatical errors, including misformation, omission, and addition, which point to specific areas for targeted instructional focus. Interestingly, the findings reveal that demographic factors, such as mother tongue and attitudes, do not significantly influence writing performance, challenging common assumptions about their role in language acquisition. Interlingual interference emerges as a key contributor to grammatical errors, underscoring the importance of addressing these influences in language instruction. Future research could explore specific aspects of language interference, such as syntactic or phonological patterns, to provide deeper insights. Expanding the study to include students from diverse linguistic backgrounds could further illuminate the complex interplay between language interference and writing performance. These findings emphasize the need for targeted, confidence-building strategies and engaging teaching methods to support students in overcoming challenges and enhancing their English proficiency.

5.0 Contributions of Author

Michael B. Garcia: Managed every step of the research process, from conceptualizing the topic and collecting data to analyzing results and ensuring ethical compliance. Executed the manuscript, made revisions and final adjustments for submission, and demonstrated a commitment to producing quality academic work.

Ruby F. Amado, M.A.Ed.: Served as the thesis adviser and co-author, providing guidance throughout the research process, overseeing the manuscript's development, inspecting for errors, and suggesting adjustments to enhance the quality of the work.

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7.0 Conflict of Interest

The authors declare no conflicts of interest.

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The Use of Humor, Irony, and Metaphors in Everyday Communication: An Exploratory Investigation

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Abstract. This study explores the role of humor, irony, and metaphors in everyday communication among college students at Mindoro State University (MinSU). These rhetorical strategies are integral to social interactions, helping individuals convey emotions, form connections, and simplify complex ideas. Using an exploratory, qualitative approach, the researchers examined how selected students employ these techniques across various social contexts, including family, friends, and academic settings. Data collection involved in-depth interviews, allowing for analysis of sociolinguistic factors, such as age, gender, and social class, that influence humor, irony, and metaphors. The findings suggest that humor fosters camaraderie, while irony subtly critiques or expresses contradictions, and metaphors enhance comprehension by linking abstract ideas to familiar experiences. Cross-cultural insights reveal unique interpretations of these elements, manifesting the potential for misunderstandings in diverse settings. This research highlights the adaptive nature of these rhetorical tools, revealing how they bridge social gaps, reinforce group identity, and support communication. The study contributes to understanding language use in regional academic settings, offering implications for effective communication and cultural sensitivity in multicultural environments.

Keywords: Communication; Exploratory; Humor; Irony; Metaphor

1.0 Introduction

Humor, irony, and metaphors are essential to everyday communication; they shape social relationships, transmit emotions, and explain complicated ideas more engagingly and meaningfully. In academic settings, particularly among college students, these rhetorical methods substantially impact social dynamics and learning outcomes. Humor promotes companionship and decreases tension, irony allows for subtle critique or expression of inconsistencies, and metaphors help people connect abstract concepts to familiar experiences, improving comprehension and communication.

These rhetorical devices are frequently used in higher education in academic and social settings. Students, for example, regularly utilize humor to cope with stress and foster relationships. According to Martin et al. (2019), comedy is an important tool for emotional regulation and social connection, especially in high-stress situations like college. Instructors can also benefit from introducing humor into their teaching tactics, as it has been demonstrated to increase student engagement and knowledge retention (Banas et al., 2011; Torok et al., 2021).

Irony, while more difficult, is an effective technique for exposing differences and giving subtle criticism. According to Leggitt and Gibbs (2019), irony allows people to communicate dissatisfaction or criticism indirectly, making it a socially strategic type of communication. Irony can help pupils traverse social hierarchies and approach uncomfortable themes without risking confrontation.

Metaphors are important cognitive tools that shape human knowledge and communication. Contemporary investigations, such as those conducted by Steen et al. (2019), support Lakoff and Johnson's (1980) foundational theory that metaphors are not only language flourishes but crucial methods for framing abstract ideas. Effective use of metaphors in educational settings has aided deeper learning, particularly in subjects that require conceptual thinking, such as science and philosophy (Paivio, 2021; Cameron & Maslen, 2019).

Despite the widely recognized importance of these rhetorical devices, research on their specific application among college students, particularly in regional academic settings such as Mindoro State University (MinSU), is sparse. Exploring how MinSU students from various social and cultural backgrounds use humor, irony, and metaphors can provide useful insights into how these tools influence their interpersonal connections, learning experiences, and identity construction.

This study will examine how chosen MinSU undergraduate students use humor, irony, and metaphors in daily communication. It specifically looks at how these rhetorical methods affect social cohesion or conflict and how they reflect larger cultural and educational contexts. The study uses a qualitative approach to capture the intricate interplay of various communication tools in students' relationships, resulting in a better understanding of their roles in both personal and academic settings. The findings will contribute to the growing body of research on communication in higher education, focusing on regional academic settings. This research will illuminate the everyday use of humor, irony, and metaphors by students at MinSU, offering insights into their communicative practices and broader cultural and educational implications.

2.0 Methodology

2.1 Research Design

Exploratory research design is used to study unsolved problems, allowing for exploring new ideas and identifying patterns without the limits of a formal framework. John Stuart Mill (1843), a foundational proponent of this method, highlighted the importance of inductive reasoning in generating hypotheses and understanding complex issues. According to Saunders et al. (2014), this strategy is especially useful when the researcher is unsure about the exact nature of the problem or phenomenon being examined, as it allows for the development of more explicit research questions and hypotheses for further examination. It is frequently the beginning point for expanding knowledge in areas with scarce information.

2.2 Research Locale

The study was conducted at Mindoro State University, Main Campus, Alcate, Victoria, Oriental Mindoro.

2.3 Research Participants

This study's participants are 50 randomly selected college students from Mindoro State University (MinSU). Choosing college students as participants is especially important considering their developmental stage when they manage social relationships and form their identities. This group participates in various social contexts, making them suitable for investigating how rhetorical tactics such as humor, irony, and metaphors function in academic and casual settings. Furthermore, the particular cultural dynamics of MinSU provide an excellent backdrop for investigating how these rhetorical devices reflect and shape communication patterns. Investigating these characteristics among college students will provide useful insights into their social interactions and coping processes in a modern educational setting.

2.4 Research Instrument

For this research, in-depth interviews were done. The study utilized a researcher-made interview guide with five parts as the main data-gathering instrument. The first part is composed of questions ((1) How frequently do you use humor, irony, and metaphors in your daily conversations in different social settings (e.g., workplace, family, friendships, and (2) In what specific contexts are humor, irony, and metaphors most commonly used in your

everyday communication?) to analyze the frequency and context in which humor, irony, and metaphors are used by the participants in their everyday conversations across different social settings. The second part dealt with questions investigating the sociolinguistic factors that influence the use of humor, irony, and metaphors in communication ((1) How do age, gender, and social class affect the use of humor, irony, and metaphors in everyday conversations?, and (2) Are there notable differences in the use of humor, irony, and metaphors across different sociolinguistic groups (e.g., youth vs. adults, men vs. women?). Then third part is composed of questions ((1)What are the primary functions of humor, irony, and metaphors in your everyday conversations (e.g., building rapport, expressing emotions?, and (2)How do you use humor, irony, and metaphors to convey abstract or complex ideas in daily interactions?) exploring the functions of humor, irony, and metaphors in everyday communication, including how they are used to build rapport, express emotions, or convey complex ideas. The fourth part includes questions ((1)How do the use and interpretation of humor, irony, and metaphors differ across various cultural groups? and (2) Are there culturally specific forms of humor, irony, or metaphor that are unique to certain communities or languages?) to examine cross-cultural differences in the interpretation and use of humor, irony, and metaphors in communication. Lastly, this dealt with questions ((1) How do humor, irony, and metaphors contribute to or hinder effective communication in interpersonal relationships? and (2) What role do humor, irony, and metaphors play in misunderstandings or conflicts in conversations between individuals?) to analyze the impact of these linguistic tools on effective communication, misunderstandings, and relationship dynamics in interpersonal interactions.

2.5 Data Gathering Procedure

Upon seeking the approval of the Program Chairpersons of the student-participants, the researchers started identifying the study participants. Each chosen participant was interviewed at their preferred time to ensure convenience and flexibility. Before the interviews began, participants were given a permission document explaining the study's aim, their voluntary involvement, and their right to withdraw at any time with no consequences. The interviews were done face-to-face, with participants notified that each session would last about 15-20 minutes and that the interactions would be videotaped for accuracy. After the interviews, the researchers thoroughly evaluated all recordings and performed a comprehensive transcription to confirm the correctness and reliability of the acquired data.

2.6 Data Analysis

This study used thematic analysis. There are different approaches to thematic analysis. The researcher decided to use the inductive approach, as it involves deriving meaning and creating themes from data without any preconceptions. In doing thematic data analysis, the researcher followed the steps of familiarization, coding, generating themes, reviewing themes, defining and naming themes, and writing up.

2.7 Ethical Considerations

All respondents were provided informed consent before participating, ensuring they were fully aware of the study's nature and objective. Respondents were informed they had the right to withdraw from the study at any moment without consequence or detriment. The respondents' anonymity was protected throughout the research procedure, and all personal information was kept private. The respondents' well-being was prioritized, and all measures were taken to protect their rights and dignity. The author additionally confirms that no conflicts of interest arose during the investigation. Every attempt was taken to avoid plagiarism, and all sources were appropriately mentioned. Additionally, the findings were interpreted honestly and without bias. Finally, the findings of this study were used purely for research reasons, benefiting the academic and scientific communities.

3.0 Results and Discussion

3.1 Frequency and Context in which Humor, Irony, And Metaphors are Used in Everyday Conversations *Varying Frequencies of Humor, Irony, and Metaphor Depending on the Social Context*

Participants highlighted how humor, irony, and metaphors differ depending on the social context, aligning with their relational and situational dynamics. Humor is commonly used among friends and family to create a relaxed atmosphere, while metaphors are prevalent in work or academic settings to simplify complex concepts. Irony is often reserved for contexts where a shared understanding of sarcasm exists, such as among close acquaintances. As one participant shared, "I feel more comfortable joking with friends or family, but at work, I use examples and

metaphors to explain my point better." This observation echoes studies emphasizing the situational adaptability of these linguistic tools (Martin, 2020; Lakoff & Johnson, 2021).

Comfort and Familiarity

Comfort levels significantly influence the frequency and choice of linguistic tools. Participants noted that humor and irony are more prevalent in informal settings, where relationships foster emotional ease. One respondent explained, *"It is easier to be sarcastic with people you know well because they get the context."* Similarly, metaphors were reported effective for simplifying complex ideas in formal settings. Research supports this claim, showing that humor strengthens interpersonal bonds, while metaphors are employed for clarity in professional contexts (Meyer, 2023; Gibbs & Colston, 2021).

Function and Purpose

Participants reported distinct purposes for humor, irony, and metaphors. Humor was cited as a stress reliever and a way to establish camaraderie, while irony served as a subtle medium for criticism or humorous commentary. Metaphors, often used in academic discussions, were seen as tools for simplifying abstract ideas. One interviewee stated, *"When things get serious, I use humor to lighten the mood, but in meetings, I prefer metaphors to explain ideas."* This aligns with research findings on strategically using these tools to foster understanding and ease tension (Kohn & Evans, 2023; Coulson, 2022).

Adaptability to Setting

Participants demonstrated linguistic flexibility by adjusting their use of humor, irony, and metaphors to suit the formality of the situation. Humor was often used sparingly in professional contexts, while metaphors were seen as universally applicable across settings. One participant noted, *"You cannot joke too much in formal settings, but metaphors work everywhere."* This adaptability reflects social cognition and audience awareness (Schnurr et al., 2021; Attardo, 2023).

3.2 Sociolinguistic Factors that Influence the Use of Humor, Irony, and Metaphors in Communication

Influence of Age on Communicative Styles

Generational preferences significantly shaped the use of linguistic tools. Younger participants favored internet-based humor and irony, often referencing memes or pop culture. Older participants leaned toward traditional humor and avoided irony in favor of clear, respectful communication. One younger participant shared, *"We use memes because they are relatable in our age group, but older people do not get it."* This supports findings that generational experiences influence humor styles and communicative strategies (Carter & Wong, 2022; Zhou & Thompson, 2023).

Gender Differences in Humor and Irony Usage

Gender also influenced the choice of humor and irony. Female participants viewed humor as a tool for emotional connection, while male participants used it to assert dominance or engage in friendly rivalry. A female respondent stated, *"I joke about building trust and making people feel at ease,"* contrasting with a male counterpart who remarked, *"For us, humor can be competitive—it's about who has the best punchline."* These differences align with gendered communication styles documented in the literature (Johnson & Patel, 2023).

Impact of Social Class on Humor, Irony, and Metaphors

Participants' educational backgrounds and social class influenced their use of metaphors and humor. Those with higher educational attainment described their humor as intellectual, using abstract metaphors and irony to convey complex ideas. Meanwhile, participants from lower socioeconomic groups emphasized humor's role in community bonding. One participant remarked, *"In our community, jokes bring us together, but in academic discussions, I focus on clear examples."* This reflects studies highlighting humor and metaphor as tools influenced by social and cultural experiences (Martinez & Rivera, 2021).

Differences Between Sociolinguistic Groups in the Use of Humor, Irony, and Metaphors

Participants perceived significant differences in humor, irony, and metaphors across sociolinguistic groups, consistent with Zhou and Thompson's (2023) findings. Youth participants identified their humor as significantly impacted by internet culture and pop culture. This supports Zhou and Thompson's discovery that comedy evolves

to fit different age groups' social and cultural backgrounds. A respondent observed, *"Our humor is more modern – older people tend to find it confusing."* For older participants, comedy was more frequently employed as a strategic tool to transmit shared values and develop rapport, consistent with Zhou and Thompson's research on humor as a social bonding mechanism among older generations. Gender-based differences in humor complement Johnson and Patel's (2023) findings, which show that men's comedy frequently works to maintain hierarchy. In contrast, women's humor seeks to foster relationships and reduce social distance. Additionally, the participants' observations on social class influencing metaphor usage align with Martinez and Rivera's (2021) study. They found that metaphor use varies by educational background and social class, with individuals from higher socioeconomic groups often adopting more abstract or intellectual metaphors. This is consistent with participants who noted that their metaphors and humor reflected their professional or educational environments, with one participant commenting that humor and irony were "intellectual, depending on education and profession."

3.3 Functions of Humor, Irony, and Metaphors in Everyday Communication, Including How they are Used to Build Rapport, Express Emotions, or Convey Complex Ideas

Building Rapport and Social Bonds

Participants regularly utilize humor to establish rapport, resulting in a calm and welcoming environment, particularly in new or casual settings. One stated, *"A good joke can help people feel more at ease – it is a great icebreaker."* Humor helps people break the ice, establish a sense of community, and connect with others personally. Recent research emphasizes the function of humor in fostering social connection. For example, Gignac et al. (2022) discovered that humor acts as a social lubricant, allowing for smoother interpersonal encounters and minimizing social distance across age groups. Similarly, Tian and Liu (2021) underlined that humor promotes group cohesion and is effective for building positive interactions in various circumstances.

Expressing Emotions and Easing Tension

Participants emphasized employing irony to express subtle emotions such as displeasure or dissatisfaction indirectly, especially when direct communication is inappropriate. A participant shared, *"When things get awkward, a sarcastic comment can diffuse the situation."* This indirect method of emotional expression allows you to express yourself without being confrontational. Furthermore, humor was identified as a technique to reduce tension in settings where conflict or discomfort may emerge, resulting in a less threatening environment. Irony and humor have been demonstrated to be excellent instruments for emotional expression, particularly in conflict-prone situations. Martin and Ford (2021) discovered that humor acts as an emotional buffer, lowering stress and encouraging a positive approach even in difficult conditions. Furthermore, Liu and Ruch (2023) discovered that irony permits speakers to express criticism in a lighter tone, preventing escalation in hostile situations.

Conveying Complex or Abstract Ideas

Many participants agreed that metaphors simplify complex or abstract topics, making them more accessible and relevant. Metaphors assist in clarifying meaning and allow listeners to connect intellectually with complex ideas by analogizing familiar objects or experiences. The use of metaphors to simplify abstract concepts is well established. One respondent explained, *"Using metaphors makes difficult concepts easier to understand."* According to Ritchie (2023), metaphors translate complex ideas into understandable imagery, bridging knowledge gaps. Furthermore, Cameron and Maslen (2021) found that metaphors promote cognitive engagement by connecting new knowledge to pre-existing mental schemas, improving understanding and retention.

Reflecting on Personal and Cultural Identity

For some participants, humor, irony, and metaphors serve as tools to reflect their individual or cultural identities. Participants who used humor that was appropriate for their peer group, such as memes or internet lingo, felt more understood and could express a cultural experience. A participant remarked, *"My jokes often reflect my culture and how I grew up – it is part of who I am."* Humor and metaphor are important in conveying personal and cultural identity, as Semino (2023) discovered. Metaphorical language frequently reflects cultural nuances and personal beliefs. Furthermore, De Fina and Georgakopoulou (2022) noted that humor and irony are culturally distinctive, making them necessary for expressing oneself in certain social groups.

3.4 Cross-Cultural Differences in the Interpretation and Use of Humor, Irony, and Metaphors in Communication

Cultural Sensitivity and the Perception of Humor, Irony, and Metaphors

Many participants emphasized how certain humor styles or ironic statements may be perceived as offensive or inappropriate depending on the cultural context. One participant remarked, "*What is funny in our culture might offend someone from another.*" For instance, American humor (e.g., memes and sarcasm) may differ from Filipino humor, which often values subtlety and indirectness. This shows that cultural groups often have unique boundaries regarding humor and irony, shaped by local traditions, language, and societal values. Recent research by De Silva et al. (2021) highlights that Western humor often relies on sarcasm and satire, which may be misinterpreted as impolite or offensive in cultures that prioritize respect and harmony, such as East Asian societies. Similarly, Liu and Ruch (2023) found that while irony is celebrated in some Western cultures for its wit, it is viewed as confrontational in more conservative or collectivist cultures, where direct critique is less common.

Linguistic and Contextual Differences in Interpretation

Participants pointed out that humor, irony, and metaphors can vary significantly due to linguistic differences and local references, making certain expressions challenging to interpret across cultures. For example, culturally specific metaphors, such as "adding oil" in Chinese for encouragement, might not resonate with those unfamiliar with the cultural context. A study by Ritchie (2023) emphasized that metaphors are often deeply embedded in cultural experiences, and their interpretation relies on shared linguistic references and societal norms. Research by Tian and Liu (2021) further noted that language barriers play a significant role in comprehending culturally specific metaphors, as certain words or idioms might lack equivalent meanings across languages.

Unique Forms of Humor, Irony, and Metaphors in Specific Cultures

Some participants noted unique humor and metaphor styles that reflect cultural identity, such as Japanese "manzai" comedy, African storytelling humor, or Filipino wordplay. These culturally specific forms showcase how communities use language to share values, convey wisdom, or entertain, rooted in local traditions and perspectives. Research by Semino (2023) highlights that culturally unique humor, like British dry wit or Filipino wordplay, embodies specific cultural values, such as resilience or collectivism. Additionally, Cameron and Maslen (2021) observed that culturally unique metaphors reflect historical and social contexts, such as the concept of "Bayanihan" in the Philippines, which represents a collective spirit of community and cooperation.

Humor and Irony as Social Tools in Cross-Cultural Communication

Participants shared how humor and irony can serve as social tools, fostering cross-cultural understanding and risking miscommunication without cultural awareness. While some cultures enjoy direct sarcasm, others may prefer more reserved expressions. Using humor, irony, and metaphors appropriately can promote rapport but requires sensitivity to avoid misinterpretation. Gignac et al. (2022) found that humor in cross-cultural interactions helps to ease tension and enhance social bonds, but it must be used thoughtfully to respect diverse norms. Additionally, Martin and Ford (2021) noted that when employed in cross-cultural settings, irony can reveal shared understandings and indirectly critique social issues but may alienate individuals unfamiliar with the style.

3.5 Impact of Linguistic Tools on Effective Communication, Misunderstandings, and Relationship Dynamics In Interpersonal Interactions

Building Connections and Deepening Understanding

Participants noted that humor, irony, and metaphors could enhance communication by making interactions more engaging and relatable, fostering emotional connections, and conveying complex ideas. When shared cultural references or similar humor styles are present, these tools help build rapport and reinforce a sense of shared experience, leading to deeper interpersonal bonds. McGraw and Warner (2022) emphasized that shared humor in conversations strengthens social bonds, especially when individuals find common ground in humor styles. Similarly, a study by Knox and Brown (2021) observed that metaphors can make abstract ideas more relatable, enabling people to connect through shared understandings and mutual expressions. When participants use irony appropriately, it can reveal a subtle alignment in attitudes, strengthening trust and mutual respect (Tomasello, 2023).

Risk of Misinterpretation and Cultural Sensitivity

Some participants indicated that humor, irony, and metaphors could lead to misunderstandings, particularly when individuals come from different cultural or linguistic backgrounds. Cultural differences can make certain jokes or ironic comments difficult to interpret, as what one group finds humorous or insightful may be viewed as rude or confusing by another. This risk of misinterpretation suggests a need for cultural sensitivity when choosing linguistic tools in diverse social contexts. In their research, Park and Shaughnessy (2021) discussed the challenge of using humor across cultures, noting that humor is heavily influenced by social norms and cultural references, which may not translate universally. Findings from Jankowski and Perunović (2020) similarly emphasize that irony often relies on specific cultural knowledge, leading to potential misunderstandings when used in intercultural exchanges. Moreover, Li and Wen (2022) highlight that metaphors rooted in local traditions or language-specific idioms are prone to misinterpretation, complicating effective communication.

Tension and Conflict from Miscommunication

Participants shared experiences of how humor, irony, or metaphors might cause offense or misunderstanding if the listener misinterprets the speaker's intent. For instance, an ironic comment intended to be lighthearted might be taken literally, escalating tension. Misapplied humor or sarcasm can contribute to conflict and harm relationship dynamics, especially when interpreted as mocking or disrespectful. Recent studies by DeStefano et al. (2023) highlight how humor can unintentionally lead to conflict when individuals feel mocked or demeaned. Knox and Barrett (2021) noted that irony, due to its indirect nature, can be perceived as disingenuous or even hostile if not properly understood. Additionally, Biehl and Humphries (2020) demonstrated that metaphors unfamiliar to one party can cause confusion and frustration, obstructing effective communication and potentially leading to interpersonal friction.

Positive Impact on Emotional Bonding and Conflict Resolution

Interestingly, some participants mentioned that humor, irony, and metaphors could also be constructive in restoring harmony within conversations or defusing tension. When used thoughtfully, these linguistic tools can help lighten serious discussions, offer indirect critiques on sensitive topics, and foster a more relaxed atmosphere, ultimately enhancing relationship quality. When used strategically, Martinez and Liu (2023) found that humor can improve relationship dynamics by easing emotional tension and allowing difficult topics to be discussed more comfortably. Further, studies by Ross and Schallert (2022) illustrate that metaphors help individuals express their emotions and perspectives indirectly, making sensitive issues easier to approach. Another study by Roberts et al. (2021) shows that irony can serve as a subtle way to provide feedback, which, if received well, can foster mutual respect and understanding.

4.0 Conclusion

Using humor, irony, and metaphors in communication demonstrates their considerable impact on interpersonal dynamics, improving the quality of social interactions by promoting understanding, connecting, and emotional expression. Their use varies across social settings, suggesting that context determines frequency and style, with comedy frequently sustaining bonds among family and friends and metaphors improving comprehension in professional or academic situations. Individual preferences and styles are shaped by sociolinguistic characteristics like as age, gender, and socioeconomic status, which reflect deeply ingrained social and cultural influences. Furthermore, these linguistic tools can bridge gaps or accidentally produce misconceptions, emphasizing the importance of context-sensitive applications. When used effectively, their adaptive potential promotes rapport and can subtly address complex ideas, emotions, or critiques, making them powerful vehicles for enhancing communication across diverse social and cultural settings.

5.0 Contributions of Authors

Author A did the editing and writing. Author B is in charge of the data gathering and encoding, and Author C is in charge of the data analysis.

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7.0 Conflict of Interests

There is no conflict of interest.

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Parasocial Relationships as a Predictor of General Belongingness among Senior High School Students

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Abstract. Parasocial relationships have become increasingly popular among adolescents due to emerging technological advancement and rampant digital engagement. This parasocial experience shifted how senior high school students fulfill their sense of belongingness, especially in schools. Several studies have reported the underlying benefits of parasocial relationships toward the development of identity, career trajectory, and body image among adolescents and its adverse effects, such as digital distress and connection overload, on their general well-being. Many studies have investigated the connection between parasocial relationships and mental health; however, few have explored the role of parasocial relationships in fulfilling belongingness among senior high school students in the Philippine context. This study employed a predictive correlational design to examine the relationship and prediction between parasocial relationships and general belongingness among senior high school students ($n=384$) in a public secondary school in Navotas City, Philippines. Using JAMOVI 2.4.14, the study found a significant ($p < 0.008$) weak positive correlation ($R=0.14$) between parasocial relationships and general belongingness among adolescents. Moreover, only 2% of parasocial relationships can predict general belongingness. This one-sided, illusionary relationship between students and celebrities/personas can only influence their belongingness in a tiny fraction. These findings suggested that family, peers, teachers, and institutions may be the primary sources of strong belongingness development. Hence, with the dominant presence of the digital world, a need to balance parasocial relationships and in-person interactions is highly encouraged. School administrators must enhance programs for media literacy, self-awareness, and active participation among senior high school students in school activities such as sports and peer-mentoring initiatives. The researcher recommended that school counselors develop effective interventions that promote a healthy balance between real-life experiences and the digital landscape, leading to students' success.

Keywords: Counseling; General belongingness; Parasocial relationships; Senior high school students

1.0 Introduction

The need to belong in a socially transformative society is fundamental in shaping an individual's thoughts, feelings, and behavior. As inherently social beings, humans naturally seek out and belong to various communities where they can satisfy their needs. Various interaction mediums have been adopted in an era of technological advancement and digital progress. Maintaining belongingness has evolved from traditional in-person interactions to virtual dialogue. One can satisfy interpersonal needs through online rapport and meaningful connections with family, friends, and significant others. Adolescents were labeled digital natives due to the presence of modern technology since birth (Bourke, 2019). This population has been observed to be naturally gifted in adopting all

forms of digital networks. Tatem and Ingram (2022) indicated that parasocial relationships (PSRs) with media figures are increasingly prevalent among adolescents, particularly due to social media use. This phenomenon is a one-sided relationship between famous figures unaware of the other's existence, which is interchanged with parasocial interactions. It is a nonreciprocal interaction between an audience and a media persona (Horton & Wohl, 1956). On the other hand, belongingness is a desire to form and maintain relationships with others (Angela, 2023). Moeller et al. (2020) revealed that lack of belongingness can result in depression, loneliness, and social anxiety among adolescents. Hence, determining factors that predict belongingness is vital in promoting well-being among young ones. Fostering a sense of belongingness in schools is crucial for creating a positive educational environment that supports students' mental health.

The global use of social media and other forms altered how individuals connect with others. As an established concept, since 1950, one-sided relationships have occurred between a fan and a media figure, such as celebrities, anime characters, and K-pop icons (Angela, 2023). Parasocial relationships are a unique form of interaction that has emerged from platforms such as radio, television, and movies. These interactions create the illusion of a personal, face-to-face connection between the audience and performers, making viewers feel part of an intimate group. However, despite this perceived closeness, the relationship remains one-sided and is controlled by the performer, lacking true reciprocity or mutual development. As Horton and Wohl (1956) described, parasocial relationships are a type of interaction from an illusion of "intimacy at a distance." Additionally, the media seeks to create new categories of "personalities," such as quizmasters and announcers, further expanding parasocial dynamics' influence in everyday life.

There is strong evidence that adolescents' media consumption, like watching anime, has significantly influenced the individual's interactions and behavior (Zafira et al., 2024). According to a recent global report, Filipinos spend close to 9 hours or more on screens daily, which ranked the Philippines 3rd in the world, following South Africa and Brazil (Purnell, 2024). Nearly 20 million Filipino youth aged 15-24 significantly contributed to this ranking. The surge in digital engagement stems from adolescents' strong desire to connect, interact, and consume digital content. Digital technology has shaped the social environment of Filipino adolescents, emphasizing the worldwide use of social media. Parasocial relationships have become a growing area of study in psychology and counseling. For instance, PSR has been recognized as one of the parasocial experiences (PSEs) that affect an individual's self and social life (The Oxford Handbook of Parasocial Experiences, 2023). Parasocial relationships were associated with adverse effects due to the comparison between individuals and their supposed "partner." This comparison results in loneliness, depression, and low self-esteem (Hoffner & Bond, 2022). In contrast, other studies suggest that parasocial relationships can uplift people's well-being because the established connection can fulfill one's sense of belonging (Angela, 2023). Additionally, one can develop meaningful bonds with media figures, which forms an alternative to "real" social relationships. These differing results indicate that parasocial relationship significantly correlates with elements that foster interpersonal connections (Tukachinsky et al., 2020).

People's motive to belong is a universally accepted need. They develop a sense of belongingness by establishing meaningful social networks and maintaining these connections. Belongingness begins to rise during adolescence and continues until adulthood. This critical period allows adolescents to extend their sense of connectedness to family, friends, school, and broader society. A collective experience of deep connections and rapport with social groups and places constitutes one's sense of belonging (Allen, 2020; Allen et al., 2021). In addition, gaining acceptance, respect, and support from others can help one maintain belongingness (Angela, 2023). As a basic human need, belongingness predicts mental, social, and behavioral outcomes. It has been suggested that belongingness is an innate desire people need to satisfy (Fabris et al., 2023). Slavich (2020) revealed that belongingness is deeply buried in an individual's biological level. The human brain, for instance, prevents the body from avoiding threats and reaching out for social safety and connectedness from other people. Meanwhile, belongingness emerges from social dynamics. An individual's social and cultural spaces, including geographical and environmental, orient oneself based on morality and belongingness (Allen, 2020). One's subjective orientation and feelings of belonging can be changed, reinforced, and challenged. In essence, people's belongingness as a need exists due to connections with the systems to which they belong (Kern et al., 2020). Significant factors causing social disconnections were social mobility, the advent of technology, and the evolving modern life (Baumeister & Robson, 2021). In a survey by Arslan (2021), social exclusion among high school students was correlated with multiple mental health problems and low well-being. Other studies show a positive correlation between the level

of belongingness, loneliness, zest, social anxiety, and optimism (Palikara et al., 2021; Wang et al., 2021). Feelings of unhappiness, including depression, also develop from a lack of belonging among people (Allen et al., 2021). This challenge in social connectedness heightened during the COVID-19 pandemic. Several studies have noted that the impact of social isolation, magnified by community quarantine, lockdowns, and social distancing, increases loneliness and mental illness among vulnerable citizens, such as children and adolescents (Ahmed et al., 2020; Allen, 2020; Dsouza et al., 2020; Wang et al., 2020).

Online communities provide a different venue for adolescents to explore various means of interaction. Smith et al. (2021) explained that people will more likely feel lonelier and less belonging if they are unsatisfied with online engagements. Fabris et al. (2023) noted that adolescents with a lower sense of belongingness in school and social media may have lower psychological health and academic achievement. These online engagements may connect to parasocial relationships where online attachment occurs among adolescents. Recent studies have shown the negative impact of lacking belongingness among adolescents, which may lead to mental health problems and suicidal ideations. Disrupted belongingness, interpersonal stress, and suicidal thoughts have significant relationships with one another (Glenn et al., 2021). The study by Swee et al. (2020) found that there is a predicted influence of low social belongingness on suicidal ideations among young people. These results underscore the vitality of meeting the need for belongingness, especially for adolescents. As technology, social media, and internet-based activities become more prevalent among adolescents, it is essential to understand their effects on students' well-being. These digital platforms can foster parasocial relationships and heighten a desire for belonging in various contexts, making it crucial to explore how these impact young people.

Recently, a study by McLaughlin and Wohn (2021) suggested that streamers' characteristics significantly predict experiencing parasocial relationships. In general, real-world media and fictional characters influenced users due to their prevalent nature and characteristics. The concept of parasocial interaction was first introduced in the 1950s by Donald Horton, a sociologist, and his co-author Richard Wohl, a psychiatrist. The term was conceptualized to describe radio broadcasters' intention to allow listeners to feel like they were sitting beside an old friend. This produced an illusion of real or fictional intimacy between radio listeners and personnel. Parasocial relationships are characterized by an enduring mental relational schema caused by parasocial interactions through media exposure. It is formed by repeated encounters that modify the schema over time. Additionally, parasocial relationships can be developed with intense, long-term exposure between users and media figures. This intense experience relates to the one-sided "intimacy at a distance" formed with media performers. Apart from media figures' characteristics, there were a few interesting predictors of parasocial relationships and other parasocial phenomena. The study by Tan-intaraarj and Pornsakulvanich (2021) revealed that social media addiction significantly predicted parasocial friendships and relationships. This implies that the development of parasocial relationships might be closely linked to social media usage, potentially fostering social media addiction (Tatem & Ingram, 2022).

Adolescents have been greatly affected by the advent of technology, which allowed them to be immersed in various forms of media. Their digital access causes them to spend over eight hours daily on screens for multiple activities. These individuals scroll, post, and interact on social media platforms like Instagram, Facebook, and TikTok (Rideout et al., 2022). These young audiences and users might develop meaningful connections with real-life celebrities or personas (fictional characters). For instance, they engage in parasocial activities, such as having imaginary connections with celebrities and media figures. A study by Gleason et al. (2017) revealed that adolescents viewed their favorite media figures as partners, with boys more likely to see media athletes as authority figures than girls. The significance of parasocial processes in understanding the developmental period of adolescents plays a role in forming their identity (Erickson, 2023). Parasocial relationships extend beyond simply liking someone from the media (Parent et al., 2024). This phenomenon transcends two aspects: parasocial communication and parasocial support. Parasocial communication pertains to acquired feelings of disclosure with media figures. Meanwhile, parasocial support is developed from trust and perceived helpfulness from the connection. However, reciprocity sets PSR apart from social relationships. One might experience a mutual connection, such as friendship with fictional characters, but the feeling is not reciprocated. However, studies indicate that parasocial relationships enhance social networks for young individuals (Bond, 2018). The findings of Parent et al. (2024) highlighted that social media, which develops parasocial relationships among LGBTQ+ young people, allows for increased interaction with content and content creators. Also, a typical media interaction, such

as the use of an AI chatbot, is prevalent among transgender and nonbinary adolescents. This resulted in finding supportive environments and conversations, lessening the adverse effects of in-person isolation.

While extensive literature exists on the relationship between parasocial relationships and well-being, few have delved into the role of parasocial relationships in satisfying belongingness among senior high school students. As Liebers and Schramm (2019) suggested, due to the polarized focus among young adults, belongingness and parasocial relationships must be navigated among children and adolescents. Furthermore, most literature overlooks how parasocial relationships predict belongingness among senior high school students. Erickson (2023) indicated that parasocial experiences, such as parasocial relationships, could give adolescents a sense of identity, influencing their career prospects and body image perceptions. This study seeks to address these gaps by focusing on the role of parasocial relationships in predicting belongingness among senior high school students. Mental health professionals like school counselors can develop action plans or programs for students' parasocial relationships and belongingness issues to enhance academic engagement and overall well-being.

2.0 Methodology

2.1 Research Design

The quantitative method was employed in this study. The researchers measured the indicators of parasocial relationships and general belongingness among senior high school students. Specifically, the researchers used predictive correlational design to analyze the association of the variables and identify the extent to which they predicted each other. This design determined if the parasocial relationship is significantly related to general belongingness among adolescents. Furthermore, it quantifies the degree and direction of association between parasocial relationships and general belongingness. In this investigation, parasocial relationship is the predictor variable, while general belongingness is the outcome variable.

2.2 Research Locale

The study was conducted at Filemon T. Lizan Senior High School at Dr. C. Bauza St. Bagumbayan South Navotas City, Philippines. It caters to Grade 11 and Grade 12 students, with the standard age of 16 to 18. This location is suitable for the study due to the accessibility and concentration of senior high school students who are digital natives exposed to various technology and media platforms. The nature of the site provided adequate responses to the research.

2.3 Research Participants

The study used a stratified proportionate sampling to select the 384 respondents. The stratified proportionate technique first divides a population into distinct groups, or strata, before randomly selecting a proportion from each stratum. The division is based on homogenous characteristics possessed by the target respondents. After the division, a proportion of each stratum was acquired to provide equal allocations. This ensured adequate representation of the population (Bisht, 2024). The study's respondents were senior high school students, specifically Grades 11 and 12. The researchers used the students' academic strands as the strata to allocate the proportion. These are the following strata: Humanities and Social Sciences (HumSS), Science, Technology, Engineering, and Mathematics (STEM), Accountancy, Business, and Management (ABM), and General Academic Strand (GAS). A power analysis through the Raosoft application was utilized to compute the sample size. The researchers set the parameters at a .05 margin of error with a confidence level of 95%. The proportionate stratified random sampling formula was utilized to measure each substratum accurately. The researchers divided the sample size and population size multiplied by the strata size. This verified that the results were statistically valid and accurately represented the senior high school students.

2.4 Research Instrument

The researchers gathered the data using two valid and open-access questionnaires. First, the Celebrity-Persona Parasocial Interaction Scale (CPPI) was used to measure the participants' parasocial interaction. This scale was developed by Bocarnea and Brown (2007) and designed to determine how media consumers form parasocial relationships with celebrities or popular fictional characters. The scale explicitly addresses the relationship between celebrities and personas and a kind of mediator that exists due to repeated exposure to famous individuals. In the survey, the participants were asked to rank their level of agreement on the 20 statements using a 5-point Likert scale ranging from "1 - strongly disagree" to "5 - strongly agree". Items No. 8, 18, and 20 are scored

in reverse. The scale has high reliability with an internal consistency ranging from 0.80 to .90. The criterion validity of the CPPI, or its ability to predict audience recognition of celebrities and personas, was reported as good. Higher total scores reflect more vital parasocial interaction (Khan et al., 2023). In addition, the construct validity is satisfactory. The scale was reported with significant validity and used for adolescents to address their developmental needs, such as identity formation, career identity, and body image perception (Erickson, 2023; Zabukovec & Faganel, 2024). The instrument is available for anyone and can be converted into digital format.

The second scale used is the General Belongingness scale developed by Malone et al. (2007) to measure the general belongingness of the participants. This self-report, 12-item scale was formulated to assess an individual's level of general belongingness. The participants were asked to rate their agreement through a 7-point Likert scale ranging from "1 - strongly disagree" to "7 - strongly agree". The scale was reported to have two subscales. The first subdomain includes items about Acceptance/Inclusion, measured by items 1, 2, 5, 8, 10, and 11. The second subdomain contains items about Rejection/Exclusion, measured by items 3, 4, 6, 7, 9, and 12. All items on the second subscale are reverse-coded before computing for the overall general belongingness score. The higher score suggests a higher general belongingness. The scale has high reliability with an internal consistency ranging from 0.92 to .94. Strong convergent and predictive validity was obtained. Moreover, the scale was reported to be valid and reliable among adolescents (Tastan, 2024). Permission from the developers was sought to convert this scale into Google Forms.

2.5 Data Gathering Procedure

The researchers obtained the data by doing several steps. Initially, a letter was sent to the principal of the senior high school to ask permission to conduct the study. Second, another letter was sent to the school registrar to get the number of students per academic strand for sample size computation. Third, two consent forms are disseminated to the respondents, including the parent's assent form and the informed consent form. These documents were collected three days later to abide by ethical standards. Lastly, the subjects who voluntarily participated were provided with the link to the Google Form. The online survey was administered through a virtual room, which was facilitated and supervised by the researchers. Clear instructions and ample timeframes were given to ensure clarity among senior high school students. To ensure unbiased responses, the respondents completed the survey in the comfort of their homes, with minimal distractions during the process. Additionally, following the standardization procedures of the scales solidifies the integrity of responses. After meeting the target sample size, the data collected were cleaned, coded, analyzed, and interpreted systematically using JAMovi 2.4.14. This software was utilized due to its free and user-friendly interface. It is widely used across various research disciplines and supports advanced statistical analysis, such as the regression needed for this study. The software also produces APA-formatted tables, figures, and graphs for easy reference. The researchers observed that there is no missing data in the dataset. In addition, the demographic data were unaltered, whereas the text responses to each statement were removed, and only the numerical codes were retained for further analysis. The preliminary assumptions were determined, and it obtained good internal consistency for parasocial relationships ($\alpha = 0.86$) and general belongingness ($\alpha = 0.85$). Additionally, the normality was determined through the Shapiro-Wilk test, wherein both variables were concluded to have a normal distribution ($p = 0.83$). Lastly, collinearity statistics determined a variance inflation factor (VIF) of 1.00, which means that the parasocial relationships (predictor) and general belongingness (criterion) are independent of one another. The first frequency tables restated the participants' demographic characteristics, including grade level and age. Next, descriptive statistics that included means and standard deviations were computed to measure the levels of parasocial relationships and general belongingness among senior high school students. Then, correlation analysis was done to establish the extent and direction of the relationship between the parasocial relationship and general belongingness among senior high school students using the probability criterion 0.05. Lastly, the researchers examined the coefficient of determination of parasocial relationship to general belongingness for predictive estimation.

2.6 Ethical Considerations

Several key factors were considered to ensure the study adhered to ethical standards. Although an ethics committee did not review this study, the researchers carefully followed established ethical guidelines. The decision not to consult an ethics committee was primarily due to the study's educational context and the minimal-risk nature. Additionally, it is acknowledged that this may pose certain limitations, such as reliance on researchers' ethical judgment. Nonetheless, the researchers ensured that necessary precautions were taken and participants'

rights and well-being were upheld throughout the data collection process. First, a formal request was submitted to the school's principal for approval to administer the survey within the chosen senior high institution. Upon receiving the endorsement, the researchers provided clear information to the participants through informed consent and parental assent forms, which outlined the study's nature and purpose. The respondents were assured that participation was voluntary. Moreover, participants were told that they could withdraw from the study at any time without negative consequences. The names of the subjects were left optional to adhere to anonymity. After the data analysis, all the datasets were encrypted and saved on password-protected devices, accessible only to the researchers to conform with confidentiality. No risks or harms are associated with completing the questionnaires provided. Finally, the study results are expected to be shared with the selected senior high school institution and student participants.

3.0 Results and Discussion

3.1 Demographic Profile of the respondents in terms of Academic Strand, Age, and Grade Level

The results (see Table 1) indicate the frequency and percentage of the senior high school students (n=384) in terms of the academic strand, age, and grade level. Senior high school students in the Science, Technology, Engineering, and Mathematics strand have the highest number of participants (f=187, %=48.47). Secondly, the Humanities and Social Sciences strand comprised most respondents (f =103, %=26.8). The remaining participants belonged to Accountancy and Business Management (f=58, %=15.1) and General Academic Strand (f=36, %=9.4). In terms of age, participants who are 16 years old are the highest (f=242, %=63), followed by aged 17 (f=111, %=28.9) and aged 18 (f=23, %=6), 19 years old (f = 6, %=1.6) and the youngest aged 15 (f=2, %=0.5) respectively. Additionally, most participants are grade 11 students, with a frequency of 302 and a percentage of 78.6. At the same time, grade 12 students garnered a frequency of 82 and a rate of 21.4. These demographic data mirror the stratified proportionate sampling utilized in this study. This reflects one of the objectives, which is to generalize the selected sample to the general population of senior high school students.

Table 1. *Demographic profile of the senior high school students*

Academic Strand	Frequency	Percentage (%)
Accountancy and Business Management	58	15.1
General Academic Strand	36	9.40
Humanities and Social Sciences	103	26.8
Science, Technology, Engineering, and Mathematics	187	48.7
Age		
15	2	0.50
16	242	63.0
17	111	28.9
18	23	6.00
19	6	1.60
Grade Level		
Grade 11	302	78.6
Grade 12	82	21.4

The table displays the active engagement of senior high school students, primarily those in the middle adolescence stage, ranging from 14 to 17 years of age. Notably, most respondents are 16, which may vary across ages. According to a survey, 16-year-olds spend an average of 5.8 hours daily on social media, which is less for younger and older teens (Rothwell, 2023). Although specific data on 16-year-olds is limited in the Philippines, available statistics indicate that adolescents and young adults are among the country's most active social media users (Balita, 2024). This evidence strongly suggests that parasocial processes, including relationships and interactions, are likely to occur during this stage of development. Reinforced by the advent of digital technologies, senior high school students seek a sense of belonging through online participation, which gradually forms parasocial relationships with celebrities and personas.

3.2 Levels of Parasocial Relationships among Senior High School Students

This table shows that most indicators, with mean scores between 2.54 and 3.49, describing parasocial relationships among senior high school students, show neutrality. This suggests that, generally, the respondents have a neutral level of parasocial relationships, emphasizing their fair level of emotional and cognitive attachment to celebrities and identified persona. However, strong indicators of parasocial relationships were displayed in the statement "I would like to meet [celebrity or persona] in person," with the highest mean score of 4.12 and a standard deviation

of 0.86, which reflects the respondents' desire for direct interactions. Other statements such as "If [celebrity or persona] appeared on a TV program, I would watch that program" ($m=3.61$, $SD=0.82$) and "I like to watch [celebrity or persona] on television" ($m=3.76$, $SD=0.80$) also display a connection between the respondents and specific media-related figures. Moreover, weak indicators can be cited from the statement, "I feel like I have very little understanding of [celebrity or persona] as a person," which has the lowest mean score ($m=2.54$, $SD=0.83$), representing less agreement among the respondents. Meanwhile, another statement, such as "Sometimes I feel like calling or writing [celebrity or persona]," with a mean score of 2.61 and a standard deviation of 0.96, indicates weaker parasocial relationship dimensions related to personal initiative. An overall weighted mean score of 3.22 and a standard deviation of 0.47, interpreted as neutral, illustrates that, broadly, the respondents perceived their parasocial relationships with celebrities and personalities at a fair level. In addition, it can also be noted that few responses are consistent or dispersed due to the variability in responses among senior high school students. For instance, items with standard deviation scores ranging from 0.80 to 0.88 represent students' responses that are consistent or close to the mean. Thus, higher SD scores, such as 0.92 to 1.03, show more significant variability, indicating that respondents had different opinions and experiences concerning specific items of parasocial relationships.

Table 2. *Levels of parasocial relationships among senior high school students*

Indicators	Mean	SD	Interpretation
1. [Celebrity or persona] makes me feel as if I am with a someone I know well.	3.30	0.86	Neutral
2. If [celebrity or persona] appeared on a TV program, I would watch that program.	3.61	0.82	Agree
3. I see [celebrity or persona] as a natural down -to-earth person.	3.21	0.83	Neutral
4. If I saw a newspaper or magazine story about [celebrity or persona], I would read it.	3.32	0.88	Neutral
5. I would like to meet [celebrity or persona] in person.	4.12	0.86	Agree
6. I feel that I understand the emotions [celebrity or persona] experiences.	3.49	0.92	Neutral
7. I find myself thinking about [celebrity or persona] on a regular basis.	2.92	0.99	Neutral
8. I do not have any feelings about [celebrity or persona].	2.90	0.98	Neutral
9. I like to watch [celebrity or persona] on television.	3.76	0.80	Agree
10. Whenever I am unable to get news about [celebrity or persona], I really miss it.	2.81	0.95	Neutral
11. Learning about [celebrity or persona] is important to me.	3.05	1.00	Neutral
12. I have been seeking out information in the media to learn more [celebrity or persona].	3.27	0.95	Neutral
13. I sometimes go to the Internet to obtain more information about [celebrity or persona].	3.49	0.93	Neutral
14. Sometimes I feel like calling or writing [celebrity or persona].	2.61	0.96	Neutral
15. [celebrity or persona] understands the kinds of things I want to know.	3.07	0.92	Neutral
16. I sometimes make remarks to [celebrity or persona] while watching television.	3.24	0.89	Neutral
17. I am very much aware of the details of [celebrity or persona]'s life.	2.78	0.98	Neutral
18. I feel like I have very little understanding of [celebrity or persona] as a person.	2.54	0.83	Neutral
19. I look forward to seeing [celebrity or persona] on television or in the print media.	3.46	0.80	Neutral
20. I am not really interested in [celebrity or persona].	3.39	1.03	Neutral
Overall Weighted Mean	3.22	0.47	Neutral

The table highlights the prevalence of parasocial relationships among the respondents, indicating that stronger tendencies for such relationships are linked to meeting celebrities or media persona in person or spending time on media-related content. This finding is supported by some studies, which emphasize the strong parasocial interactions and relationships among adolescents tied to television and media consumption, as well as the bonds formed through watching TV shows and related content (Liebers & Schramm, 2023; Tatem & Ingram, 2022). The concept of idolization and fandom among adolescents for media stars further reinforces this idea. According to Zabukovec and Faganel (2024), specific actions performed by media characters, such as looking directly at the camera, turning towards it, addressing the audience directly, and making eye contact, can solidify these parasocial relationships. Factors contributing to adolescents' inclination to consume television and media-related content include perceived similarity to the celebrity or media persona, attractiveness, trustworthiness, and authentic social interactions (Schramm et al., 2024). For instance, adolescents who engage in social interactions on X (formerly Twitter) with their favorite media figures through retweets or replies may strengthen their parasocial relationships. Additionally, adolescents' desire to meet celebrities and media personas in person often stems from unmet emotional needs (Erickson, 2023). This emotional gap encourages adolescents to emulate specific traits from their aspirational media figures. Meanwhile, the weak indicators of parasocial relationships, specifically underscored by a limited understanding of celebrities/personas and their intention to call or write, can be attributed to several reasons. First, the idealized and superficial engagement between adolescents and celebrities/personas is often limited by their exposure to digital media, resulting in a lesser understanding of celebrities/personas as individuals and weaker parasocial bonds. Second, through awareness of the boundaries

of the one-sided relationship, adolescents' recognition may reduce their desire to reach out to the celebrity/persona, such as calling or writing, and be unlikely to elicit any personal initiative. Haupt and Johnson (2023) suggest that adolescents may also invest little in this relationship as they prioritize real-life interactions during adolescence. While some indicators show higher and lower levels of parasocial relationships, most of the items are neutral in some way. This suggests the dual nature of parasocial relationships, which may either foster connections or withdraw from real-life interactions (Lee et al., 2024). This, however, proves adolescents' flexibility in managing and nurturing digital and in-person relationships.

3.3 Levels of General Belongingness among Senior High School Students

Table 3 shows the levels of general belongingness among senior high school students. The weighted mean score of 4.38 and standard deviation of 0.92 illustrate an impartial view of belongingness. This implies that most students are socially integrated with varying measures of uncertainty. Positive signs were noticeable with indicators such as "I feel included" ($m=4.67$, $SD=1.38$), "I feel connected with others" ($m=4.88$, $SD=1.30$), "I have a sense of belonging" ($m=5.12$, $SD=1.22$); these show that majority of the students feel accepted at a moderate level within their familial and social circles. While ratings to indicators such as "I feel like an outsider" ($m=3.62$, $SD=1.56$) and "I feel isolated from the rest of the world" ($m=3.83$, $SD=1.82$) show that some students feel partially rejected. Specifically concerning was the slight agreement with the indicator "Friends and family do not involve me in their plans" ($m=4.93$, $SD=1.66$), revealing that some students still feel excluded.

Table 3. Levels of general belongingness among senior high school students

Indicators	Mean	SD	Interpretation
1. When I am with other people, I feel included.	4.67	1.38	Slightly Agree
2. I have close bonds with family and friends.	5.66	1.27	Slightly Agree
3. I feel like an outsider.	3.62	1.56	Neither Agree nor Disagree
4. I feel as if people do not care about me.	3.36	1.63	Slightly Disagree
5. I feel accepted by others.	4.76	1.32	Slightly Agree
6. Because I do not belong, I feel distant during the holiday season.	3.75	1.79	Neither Agree nor Disagree
7. I feel isolated from the rest of the world.	3.83	1.82	Neither Agree nor Disagree
8. I have a sense of belonging.	5.12	1.22	Slightly Agree
9. When I am with other people, I feel like a stranger.	3.27	1.62	Slightly Disagree
10. I have a place at the table with others.	4.73	1.36	Slightly Agree
11. I feel connected with others.	4.88	1.30	Slightly Agree
12. Friends and family do not involve me in their plans.	4.93	1.66	Slightly Agree
Overall Weighted Mean	4.38	0.92	Neither Agree nor Disagree

In view of this, the study revealed that the need to belong contributes a lot to the student's emotional and social well-being. If students are included, they are more likely to find value added to their interactions. Students who feel included experience greater involvement than those who feel excluded, leading to loneliness and a lack of motivation for social engagement. The schools and students' families significantly encourage communication, group interactions, and peer support. Addressing these gaps ensures that the students feel included by offering support. This result supports the study conducted by Ahmadi et al. (2020), who discussed that belonging is an innate quality where people need recurrent personal connections with other people. This claimed that a sense of belonging impacts students' performance in attendance, academic performance, and success (Boston & Warren, 2017). Moreover, school counselors can plan and implement small group counseling interventions or other programs with the support of the students' families and teachers to address students' feelings of exclusion (Brooks, 2021).

3.4 Relationship between Parasocial Relationships and General Belongingness

Table 4 revealed the relationship between Parasocial Relationship and General Belongingness among senior high school students. It shows that the probability obtained ($p = 0.008$) is less than the probability criterion of <0.05 . Therefore, the researchers rejected the null hypothesis and inferred a significant association between parasocial relationships and general belongingness among senior high school students. Furthermore, the relationship is positive and weak ($R=0.14$), indicating that general belongingness increases as the parasocial relationship rises. Conversely, when parasocial relationships decrease, general belongingness decreases, too.

Table 4. *Relationship between parasocial relationships and general belongingness*

Variables	R-value	p-value	Decision	Remarks
Parasocial Relationship	0.14	0.008	Reject Ho	Significant
General Belongingness				

This finding supports the study of Gleason et al. (2017), where parasocial relationships (PSRs) with media figures play a significant role in adolescent development, potentially influencing identity formation and autonomy. Additionally, parasocial relationships with media figures influence well-being and belonging. Brought by the pandemic, parasocial closeness increased as people engaged in social distancing, suggesting that media persona became more meaningful (Bond, 2021). Furthermore, Hoffner and Bond (2022) found that parasocial relationships are associated with multiple well-being outcomes, including enhanced feelings of belonging, healthy attitudes, and coping. On the other hand, parasocial relationships involve media consumption and individual perceptions. Parasocial relationships may not directly translate into feelings of belonging unless these relationships are deeply personal or involve meaningful figures. Rosaen and Dibble (2017) indicated that perceived similarities between viewers and media persona influence the strength and enjoyment of parasocial relationships. Still, these associations can be moderated by personal characteristics such as attachment anxiety, avoidance, or loneliness. Moreover, parasocial relationships are driven by self-serving or egocentric motivations, which involve parasocial perception, suggesting a weak correlation with feelings of belongingness (Riles & Adams, 2021). This finding is limited only to the association of parasocial relationships and general belongingness. Other dynamic social factors like peer interactions, socioeconomic status, family support, and mental health may influence general belongingness, which overshadows the role of parasocial relationships. Uslu and Gizir (2017) revealed that positive relationships with teachers and peers promote adolescents' sense of school belonging and willingness to participate in school activities. Moreover, family involvement and attitudes towards school positively impact a student's sense of school belongingness.

3.5 Regression Estimate of Parasocial Relationships and General Belongingness

The results in Table 5 display the prediction of parasocial relationships to general belongingness among senior high school students. The beta coefficient obtained for the Parasocial relationship is 0.26. The standard error obtained is 0.09, while the t-value is 2.67. Moreover, the ANOVA for this regression model gauges an F-value of 7.12 with a probability value of 0.008. These results revealed that parasocial relationships can explain the significant variance in general belongingness among senior high school students. It is highlighted that the coefficient of determination obtained is 0.02, meaning that only 2% of parasocial relationships can predict general belongingness among secondary students.

Table 5. *Regression estimate of parasocial relationships and general belongingness*

Predictor	Estimate	SE	t-value	p-value	Remarks
Intercept	3.53	0.32	11.01	<0.001	Significant
Parasocial Relationships	0.26	0.09	2.67	0.008	Significant

Note. $R^2 = 0.02$, Adjusted $R^2 = 0.015$, F-test = 7.12

This supports the research of Lutz et al. (2024), which explores the complex relationships between parasocial interactions, social media use, and feelings of belongingness among students. It was revealed that parasocial relationships with media characters could be as effective as real-life relationships in restoring belongingness needs and regulating emotions after social exclusion among university students. Hence, these one-sided connections serve as an effective coping mechanism for a lack of belongingness. Additionally, only a small portion of parasocial relationships influences general belongingness since real-world relationships are more vital among students. Aries et al. (2022) suggested that connections with peers, teachers, and the institution influence students' sense of belonging, even among students attending distance learning. Research on predictors of belongingness among students has identified several key factors that provided more substantial predictive insights than parasocial relationships. Ahmadi et al. (2020) reported that belongingness is associated with socioeconomic status, parental involvement, and peer support. School-level variables like fairness and teacher-student relations also play a role. Moreover, peer relationships consistently influence belongingness. Factors such as school members, adequate facilities, extracurricular participation, and alignment between students' interests and school majors contribute to school belonging among senior high school students (Adinata & Hanami, 2024).

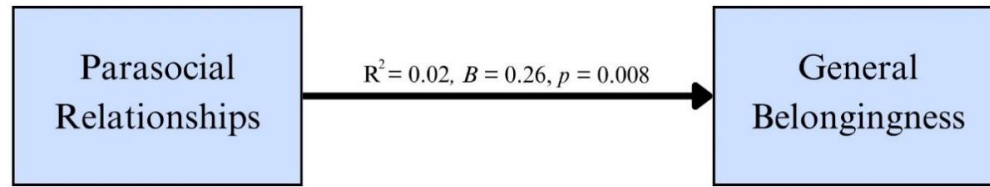


Figure 1. Simple linear regression

Figure 1 presents the simple linear regression between parasocial relationships (x) and general belongingness (y) among senior high school students. The analysis revealed that parasocial relationships correlate significantly ($p < 0.008$) with general belongingness. Moreover, parasocial relationships have a weak predictive value, accounting for only 2% of the variance in general belongingness. The beta estimate computed is 0.26, indicating that general belongingness is expected to increase by 0.26 units for each one-unit increase in parasocial relationships. This suggests that while parasocial relationships are related to feelings of belongingness, their contribution is minimal. The small predictive value indicates that other factors, such as perceived similarities (Rosaen & Dibble, 2017), egocentric motivations (Riles & Adams, 2021), and peer interactions and family support (Uslu & Gizir, 2017) are likely to influence senior high school students' sense of belonging more than parasocial relationships.

4.0 Conclusion

The researchers concluded that there is a positive and weak association between parasocial relationships and general belongingness among senior high school students. Moreover, parasocial relationships predict general belongingness among adolescents but only in a small portion. These findings implied that parasocial relationships—the connections adolescents create with media personalities—can contribute to their sense of being included with their friends, family, and others. Furthermore, media interactions can help senior high school students feel more connected to the world. This supported the research of Bond (2021), which stated that PSRs grew stronger as face-to-face interactions decreased and mediated social engagement increased. This growth was particularly evident for media personas, which are more likely to invoke parasocial interaction. This suggests that PSR may serve a compensatory function during social distancing, which started during the pandemic. The increased reliance on screens for social interaction may have blurred the distinction between real-life friends and media persona, strengthening PSRs. Furthermore, parasocial relationships through narrative media consumption and retrospective imaginative involvement can satisfy intrinsic needs, especially during social isolation (Sherrick et al., 2022). Notably, parasocial relationships are not the sole factor in fostering a sense of belongingness among senior high school students; they can be leveraged positively to support students' social and emotional well-being. The study by Vang and Nishina (2022) highlighted that a positive school interethnic climate is associated with stronger feelings of belongingness, indirectly contributing to better psychological adjustment, fewer physical symptoms, and improved student grades. Additionally, belongingness is positively related to academic resilience, buoyancy, social functioning, and psychological well-being while negatively associated with psychological and emotional distress, especially for academically at-risk adolescents (Arslan & Coşkun, 2023).

The study also revealed that senior high school students exhibit fair levels of parasocial relationships and general belongingness. While most indicators are neutral, media engagement and drive to meet celebrities and personas in person magnifies the strength of parasocial relationships among adolescents. This neutrality is bounded by the diversity of students' experiences concerning parasocial experiences. The findings provide an avenue for schools to enhance media literacy programs, underscoring the role of media in the social and emotional dimensions of adolescents (Taibi et al., 2023). In this critical period, such initiatives are imperative in building and balancing digital connections and real-life encounters, fostering healthy online engagements, and preventing excessive attachment to illusionary connections.

The researchers encourage students to assess their media consumption by setting limits and establishing acceptable boundaries to prevent excessive reliance on parasocial relationships to meet their emotional and social

needs. The study conducted by Faulhaber et al. (2023) found that reducing social media usage led to improved psychological well-being and decreases in depression, fear of missing out, anxiety, and loneliness. It has become clear that adolescents often experience "digital stress" due to their constant exposure to the online environment. This stress is primarily caused by the pressure for online social approval, overwhelming notifications, and connection overload (APA, 2023). To combat these issues, students are urged to collaborate in person and participate in school clubs, sports, or peer organizations to strengthen their sense of belonging. Given the emerging benefits and adverse effects of social media on adolescents' feelings of connection, it is essential to promote healthy parasocial experiences alongside real-life relationships (Bennett, 2024). Doing so enhances the bridge between reality and the media landscape among adolescents. Moreover, the school management team is recommended to cultivate positive relationships among students, peers, teachers, and school staff. The research of Allen (2019) suggested that parents have a significant role in building belongingness within the school community. To foster belonging among students, school administrators should ensure that the parents of the students are involved in the process. Sparks (2019) found that students who felt connected to their school and family as adolescents grew up safer and with better mental health.

Furthermore, the researchers recommended that school counselors plan and conduct various engagement programs related to media literacy, which helps students and other stakeholders understand the role of media in adolescents' social and emotional well-being. The research by Hu et al. (2018) highlighted that school counselors who facilitate programs related to media literacy help adolescents meet their emotional needs, find meaning through life challenges, and enhance self-efficacy. These programs are significant in understanding that parasocial relationships are more profound and complex, impacting individuals' lives. Furthermore, future researchers should consider getting diverse samples across the lifespan (children, young adults, middle adults, and old age) and educational levels (elementary, secondary, and tertiary) to thoroughly understand parasocial relationships and general belongingness. In addition, other statistical analyses, such as moderation, mediation, or sequential equation modeling, are recommended to deeply explore the association between parasocial relationships and general belongingness. While PSRs can be beneficial, future researchers should test other factors promoting students' belongingness, including faculty support, institutional climate, extracurricular activities, and community involvement.

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All the authors declare equal contributions to each section. The authors reviewed and approved the final work.

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Effects of Learning Log on the Statistics Performance of College Students

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Abstract. This experimental study evaluated the effects of learning logs as a formative assessment of the performance of the statistics. The study addressed the gap in research on effective formative assessments in statistical education. This was made through a pretest-post-test comparison of the performance before and after the intervention. The study took place in the College of Teacher Education in one of the state universities in Cebu. The findings showed that the pretest performance of the experimental group, which was subjected to a learning log, and the control group, which was subjected to conventional formative assessment, were Below Passing and did not meet the passing percentage set by the university. In the post-test, the students in the control group showed Below Passing while the students in the experimental group performed Above Passing. Statistical analysis revealed a significant improvement in the mean scores for both groups, with the experimental group showing a greater mean gain. According to the findings, learning logs helped students perform better in Statistics. These findings suggest that learning logs can enhance students' performance in Statistics. Further research is recommended to explore this intervention in greater depth over a longer period.

Keywords: Experimental study; Formative assessment; Learning logs; Performance improvement; Statistics.

1.0 Introduction

The educational system was greatly affected during the fight against the COVID-19 pandemic. The transition from face-to-face learning to online learning had a significant impact on the teaching and learning process. Given this impact, the Commission on Higher Education (CHED) encouraged higher education institutions (HEIs) to maximize the exercise of academic freedom by enabling them to utilize available flexible learning, e-learning, and other alternative learning modality to students and implemented policies in accordance to CHED prevailing policies (CHED, 2020). These policies include utilizing various learning platforms in a remote setup and conducting asynchronous and synchronous lectures with corresponding time-independent assessments/tasks. These modalities are designed to enable students to perform "self-paced learning," where students have complete control over how, what, when, and where they study.

The online learning environment encourages learners to study independently as they are fully engaged in the learning process. However, this independence in learning engagement appeals to cause certain concerns. Among these concerns is the validity of assessment measures. There seemed to be an increased avenue of cheating, where

students used the means and resources to do so. It is recognized that some students are too reliant on the internet to answer given activities and quizzes. Undoubtedly, this reliance affects student achievement.

The goal of formative assessment procedures is to help students make the most of their learning opportunities by providing frequent, relevant, and immediate feedback (Vonderwell & Boboc, 2013; Gizem Karaoglan-Yilmaz et al., 2020). In this context, learning logs known for reflective thinking are effective teaching methods for this purpose (Gökbulut & Eren, 2018). This is where the learning log as a formative assessment comes in, as it lets the students keep track of what they are learning and could pose any questions during the process. At the same time, teachers monitor their progress toward mastery of the learning objectives as they provide relevant feedback along the way. The learning log contains the summary of learning, relevant examples, experiences, unanswered questions, and other relevant ideas related to the topic weekly.

Most recent studies showed the effectiveness of integrating learning logs in various courses such as Languages, Foreign Languages, English, Physical Science, and Mathematics (Gökbulut & Eren, 2018; Slezak et al., 2019; Brown, 1995). There has been little research on the use of learning logs, and they are out of date. Brown (1995) concluded in his study that the experimental group was superior in written mathematical communication and showed a more significant reduction in Math anxiety than the control group during the implementation of a writing paradigm (learning log) into high school Algebra classes. On the other hand, Gökbulut & Eren (2018) investigated the application of learning logs in the classroom among primary school learners, and they found that they help improve learning and positively boost the academic success of the mathematics course.

However, there appear to be gaps in the literature, as there are no similar works at the tertiary level, where studies on learning logs remain insufficient. Given those gaps, the researcher conducted this study to determine the effects of learning logs as formative assessments of Statistics academic performance among university students in an online learning environment, with the desire to narrow the literature gaps by contributing to them.

2.0 Methodology

2.1 Research Design

This study used an experimental method, specifically the pretest-post-test control group design. The experimental design is diagrammed as follows:

$$\begin{array}{cccc} G_1 & O_1 & X & O_2 \\ G_2 & O_3 & & O_4 \end{array}$$

Where:

- G_1 is the experimental group subjected to a learning log as a formative assessment,
- G_2 is the control group subjected to conventional formative assessment,
- O_1 and O_3 are pretest,
- X is the experimental intervention, which is the learning log,
- O_2 and O_4 are post-tests.

2.2 Research Locale

The study took place in the College of Teacher Education in one of the state universities in Cebu. The institution is Level IV accredited by the Accrediting Agency of Chartered Colleges and Universities in the Philippines (AACCUP).

2.3 Research Participants

The participants of this study were college students from the College of Teacher Education during the second semester of the academic year 2021-2022. There were 31 students in the control group and 34 in the experimental group. The control and experimental groups were assigned based on the university's sectioning process, with students randomly placed in each section. Thus, the groupings were heterogeneous. Two sections were chosen using random cluster sampling. In choosing the participants for the control and experimental groups, a random

assignment was used to determine which section belonged to the control group and which belonged to the experimental group.

2.4 Research Instrument

This research involved two sets of instruments. The first instrument was the learning log, which was used as a formative assessment. The online platform for submitting learning logs was Google Docs. The logs were updated every Friday of the week, and feedback was given on Saturdays for 3-4 weeks. The second instrument was a 20-item test covering the topics of the lesson on Data Management. The subtopics were the following: Measures of Central Tendency, Dispersion and Relative Position, Normal Distribution, Linear Regression, and Correlation. Statistics is the focus subject of this study. An issued memorandum of the Commission of Higher Education that will support this study is CHED Memorandum Order 20, series of 2013. This is the General Education curriculum, whose purpose is to holistically develop the person. The General Education Outcomes are categorized into three categories: Intellectual Competencies, Personal and Civic Competencies, and Practical Responsibilities. The new GE curriculum is standard for all undergraduate students in private and public HEIs, regardless of their major. It exposes them to various fields of knowledge and ways of interpreting social and natural realities while strengthening intellectual and civic capacities. The following preliminary preparation was done to validate the researcher's data. The validity and reliability of the research instrument were assessed. Five experts in Statistics validated the second instrument. They were given the request letter for tool validation and a copy of the research instrument table of specifications. The split-half analysis was used to test the instrument's reliability.

2.5 Data Gathering Procedure

A letter was sent to the Dean of the College of Education asking permission to conduct the study, duly noted by the Mathematics Department Chairman, BSED Programs, and Research Proposal Adviser (see Appendix A). The students were given a pretest and a post-test. Their scores were used as data, which were interpreted and analyzed. The lessons during the research period were the same for both groups; the only difference was that the experimental group utilized a learning log as a formative assessment, while the control group used conventional formative assessments such as quizzes and oral recitations. The study was implemented for four weeks. During the first meeting, the control and experimental groups took the pretest on the lesson "Data Management."

2.6 Ethical Considerations

Through completion of the Research Ethics Checklist for Investigations Involving Human Participants, permission to conduct this study was granted by the University of the Philippines Cebu Research Ethics Committee and Research Ethics Clearance Form. This was done to ensure the safety and confidentiality of all participants in the study. A letter was sent to the Dean of the College of Education requesting permission to conduct the study, noted by the Chairman of the Mathematics Department, the Chairman of the BSED Programs, and the Research Adviser. On the first day of the research duration, students were given an orientation on the nature of the study and how it would be undertaken. They were also given an informed consent form.

Additionally, a thorough verbal explanation was provided to the research participants via Zoom, assuring them that their names would not be made public, that the data would be kept private, and that the results of the pretest and post-test would not be recorded or reflected in the class record. Precautions were taken to ensure that the identities of the participants remained anonymous. All of the information was de-identified. It contained no personal information about the participants or unique personal identifiers that could lead to assumptions about those involved. Data that were no longer required were removed from the researcher's file.

3.0 Results and Discussion

From Table 1, the pretest performance of the control group had an average score of 9.19 with a standard deviation of 2.61. The pretest performance of the experimental group had an average score of 8.91 with a standard deviation of 2.63. Both groups did not reach the standard criterion set by the university, which is 60% of the total score. Since the total score is 20, hence the passing score is 12. The passing performance of the two groups below implied that the respondents might have little or no knowledge of the concepts since this was still a pretest and the concepts had not yet been discussed.

Table 1. *The pretest performance of the respondents*

Groups	Pretest Performance			
	n	Mean	Standard Deviation	Qualitative Description
Control Group (subjected to conventional formative assessment)	31	9.19	2.61	Below Passing
Experimental Group (subjected to learning log)	34	8.91	2.63	Below Passing

According to the results shown in Table 2, the control group's post-test performance had a mean score of 10.26, and the standard deviation was 2.92. Compared to how they performed in the pretest, the range of their scores was substantially wider here. The performance level of the experimental group in the post-test was 12.65, which is above passing. The control group had a performance score of 10.26, which is below passing. The control group's performance may indicate that some of the concepts were too difficult for them to grasp. This also implied that the students in the control group might lack understanding of Statistics concepts.

Table 2. *The post-test performance of the respondents*

Groups	Pretest Performance			
	n	Mean	Standard Deviation	Qualitative Description
Control Group (subjected to conventional formative assessment)	31	10.26	2.92	Below Passing
Experimental Group (subjected to learning log)	34	12.65	2.59	Above Passing

Langoban (2020) identified the underlying causes of students' difficulty with math learning. The causes of this problem are summarized by three primary themes: (1) delivery of instruction by the teacher/instructor; (2) learners' ability and experiences; and (3) school environment and facilities. Mamolo (2022) also discovered that while the online style of instruction appears complex, students' mathematical motivation and self-efficacy declined. This might be the case because since everything occurred online, students might find it difficult to approach their peers or teachers about their problems. The experimental intervention, a learning log, resulted in the above passing performance of the experimental group. The learning log assisted the students in monitoring their learning. With the assistance of the teacher's feedback, the students were able to achieve the university's criterion of 60% in the test items.

Table 3 shows that the control group got a mean gain of 1.07 while the experimental group had a mean gain of 2.40. Since the computed p-values of 0.04 and 0.00 were less than $\alpha = 0.05$, this rejected the null hypothesis that there was no significant difference between the pretest and post-test of the control and experimental groups. This indicated that there was a significant improvement from the pretest to the post-test of students who were subjected to conventional formative assessment and those who were subjected to learning logs. The significant improvement of the experimental group could be due to the relevant and frequent feedback given by the teacher after the submission of the learning log. Although the post-test performance was below passing, the significant increase in learning of the control group might be because formative assessment aims to gather data to improve student achievement and make necessary changes in how teaching is delivered. However, it showed that it was not as effective as the intervention used in the experimental group.

Table 3. *College of teacher education students' mean gain in statistics from the pretest to the post-test*

Groups	n	Pretest Mean	Post-test Mean	Mean Gain	Standard Deviation	Test Statistics	
						Computed t-test	p-value
Control	31	9.19	10.26	1.07	2.92	-2.08*	0.04*
Experimental	34	8.91	12.65	2.40	2.59	-6.96*	0.00*

The control group's performance, which received conventional formative assessment, improved from the pretest to the post-test. However, it revealed that performance is still below passing, implying that conventional formative assessment was ineffective despite improving performance. This supported the findings of Hattie (2009) and Shepard (2019), who found that formative assessment enabled teachers to regularly modify instruction to help students improve using the assessment results. Teachers formatively use data when collecting test evidence to influence instruction and improve learning. These tasks provide teachers and students with feedback, allowing for modifying teaching and learning strategies in response to the findings. The teacher analyzed the results of formative assessments to pinpoint in-process academic areas that still need to be worked on since learners may be having trouble understanding concepts, picking up new abilities, or simply moving up a level.

Students' ability to be motivated and reflect on their progress may be a contributing factor to the effectiveness of learning logs in the experimental group. This supported the study of Upton and Hirano (2022), who found that "Self-Learning Logs" allowed students to improve their capacity for reflection, review, confidence, and motivation. Khalid (2020) also added that Mathematics students with reflective thinking tended to be more confident in their ability to solve Mathematics problems. Both students and teachers could track learning deficiencies and address them properly. Early identification of misconceptions and confusion in Mathematics leads to successful learning. The key factor in the teacher's role as a motivator, according to Tambuhan's (2018) study, is the indication of the delivery of learning objectives, comfort learning, and a range of learning methodologies, all of which had an impact on student's motivation to succeed in Mathematics.

As shown in Table 4, a difference of 1.33 was obtained in favor of the experimental group. Since the computed p-value is less than $\alpha = 0.05$, we rejected the null hypothesis that there was no significant difference in the mean gains in Statistics score between the control and experimental groups. The result implied that students subjected to a learning log achieved better in Statistics than the control group. This result implies that students subjected to a learning log as a formative assessment showed better improvement in their Statistics performance compared to those subjected to conventional formative assessments. The result contradicted the finding of Slezak et al. (2019), which showed no difference between the students' learning gains in the experimental and control groups. However, the result supported the findings of Gokbulut & Eren (2018) that there was a significant difference between the total post-test scores in favor of the experimental group. It also demonstrated that learning logs were beneficial to students provided with relevant and immediate feedback. Furthermore, students reflect on their mistakes, reasoning, and overall learning progress.

Table 4. College of teacher education students' mean gain in statistics

Groups	n	Mean Gain	Difference Between Means	Test Statistics	
				Computed t-test	p-value
Control	31	1.07	1.33	3.47*	0.000*
Experimental	34	2.40			

Note: *Significant at $\alpha = 0.05$

The higher performance exhibited by the experimental group subjected to the learning log affirms Jean Piaget's Cognitive Theory of Constructivism and John Dewey's Reflective Thinking, which emphasize involving students as active participants in the learning process. Also, engaging students' reflective thinking ability, examining what they know and still need to know, and how they bridge that gap in various learning situations (Satjatam et al., 2016).

4.0 Conclusion

Most students perceive mathematics as a complex subject. Experts in education, like Rawlasyk (2018), pointed out that assessment is one of the core elements of effective teaching and learning approaches for formal higher education. It is one of the most critical aspects of the learning process. Thus, teachers are encouraged to look for interventions that promote student engagement, boost their enthusiasm, and facilitate maximum learning and achievement in Mathematics. This study showed that a learning log as a formative assessment was an effective intervention measure in enhancing students' performance in Statistics. This study affirmed the theories of Piaget's Cognitive Theory of Constructivism and Dewey's Reflective Thinking, which emphasize engaging students as active participants in the learning process and engaging them in reflective thinking.

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The authors declare no conflicts of interest about the publication of this paper.

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Mediating Role of Coping on the Relationship between Daily Spiritual Experience and Quality of Life among Generation Z

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Abstract. Coping is defined as an individual's effort in dealing with life challenges. This could vary among individuals, where cultural, social, spiritual, and other factors greatly influence how people cope and feel about life's quality. Daily spiritual experiences refer to an individual's connection to a higher being that influences their thoughts and actions and overall well-being in different aspects, including social, physical, and emotional. Research has been conducted to measure the relationship between spirituality and quality of life. However, there is a dearth of research on Generation Z within the local context that examines the mediating role of Coping in this association. This research was conducted among Generation Z (n=406) at a state university in Pampanga, Philippines. The Raosoft application was employed to compute the sample size, and the participants were recruited through a stratified proportionate sampling technique. JAMOWI version 2.4.14 was utilized for data analysis. Findings revealed that coping partially mediates the relationship between daily spiritual experience and quality of life ($B=0.08$, 95% CI [0.05, to 0.11]) among Generation Z. This demonstrated that daily spiritual experience influences the quality of life both directly ($B=0.25$, $p < 0.001$) and indirectly through coping among Gen Z. The researchers concluded that spiritual Gen Z is better equipped to cope with life problems which improve their quality of life. Therefore, school stakeholders should foster academic environments that promote coping mechanisms among Generation Z. Furthermore, school counselors should integrate these coping strategies into various counseling programs. Future researchers are encouraged to explore the mediating role of coping in the relationship between spirituality and quality of life across generations.

Keywords: Coping; Daily spiritual experience; Generation Z, Mediation, Quality of life.

1.0 Introduction

In recent years, it has become increasingly crucial to comprehend how young people deal with obstacles and preserve their well-being as the digital era continues to impact their lives. All ages should prioritize their mental health, but Generation Z has been observed to deal with special pressures from social media, academic requirements, and cultural expectations. Human services and counseling professions are vital in offering help and direction to overcome these problems. Generation Z has faced significant challenges in their quality of life, which can be attributed to several factors, such as immersion in digital technology, the pandemic, and life transitions. According to Pertiwi et al. (2022), social media dependency negatively impacts psychological well-being.

Additionally, the abrupt shift to virtual education during the pandemic has further stressed this generation, potentially affecting their learning styles and mental health (Nongbri, 2021). The common mental health issues among Gen Z include depression, anxiety, self-harm, and eating disorders (Khairiyah et al., 2024). It is even reported that Generation Z faces a much higher risk of mental health issues compared with older generations. Moreover, there is an increased maladaptive coping behavior, such as substance use during the COVID-19 pandemic, among Generation Z (Grelle et al., 2023).

Given the existence of these mental health problems among Generation Z, it is only vital to determine factors such as spirituality and coping that would alleviate the poor mental health outcomes among this population, especially in the local context. Filipino's strong faith is protective in mitigating life challenges and improving coping mechanisms. Filipino disaster survivors commonly reported spiritual coping as their strategy and source of strength (Hechanova et al., 2015). According to Jocson and Garcia (2021), Filipino spirituality is deeply rooted in religious practices and beliefs, influencing one's quality of life. Additionally, Arnado et al. (2022) mentioned that Filipinos accomplished spirituality through daily prayer, self-transformation, and good works and were even adapted into technological formats aligned with social distancing measures during the pandemic. The pandemic also sparked community pantries, exemplifying spirituality through offering oneself to others, demonstrating Filipinos' inherent altruism in times of crisis (Canete et al., 2021).

Furthermore, Manap et al. (2021) state that a substantial segment of Generation Z members participates in spiritual activities. However, the degree to which these activities support their general well-being and coping mechanisms is yet to be investigated. This research aims to clarify the connection between coping strategies and everyday spiritual experiences, providing insightful information to mental health practitioners, educators, and legislators. However, no research has explored how these students' religiosity and spiritual coping influenced their quality of life. Jaysawal (2022) stated that a more general definition of spirituality was pursuing a relationship with oneself, other people, the natural world, and a sacred or higher being. Park et al. (2024) illustrated that people might have defined themselves as spiritual, religious, or both. Although they practiced spirituality, Generation Z individuals may not have always identified with a particular religion or set of beliefs. Only half of those in Generation Z said they had resorted to faith for help during difficult times. They were also more inclined to follow spiritual than religious practices (Springtide Research Institute, 2022).

Mental health professionals embraced spiritual practices to meet the issues that Generation Z experiences. Spirituality has become increasingly recognized in treatments for this group of people. Pelechova et al. (2018) stressed the significance of spirituality even more for those working in the mental health field. They contended that practitioners could assist clients in building a foundation of inner peace and coping by including spiritual activities in therapeutic sessions. Delved individuals who participated in this study relied more on spirituality after the session. As serenity unearthed towards their perspective, reliability in beliefs or spirits tended to be disclosed in their mentality as one of the resiliency factors.

Scholars view spirituality as a multifaceted, subjective construct that might be wholly distinct from religion (Janse van Rensburg et al., 2015) or contain religiosity (Torskenaes et al., 2015). According to some research, the primary distinction between spirituality and religiosity was that the former was unaffected by societal influence and was not stigmatized (Baumsteiger et al., 2013). Yazon et al. (2017) discussed that these situations did not exclude students. Most students frequently had difficulty preparing for their academic work. Many students found their time stressed because they were adjusting to new social and educational settings. Nonetheless, it was thought that some elements, such as stress management techniques, might help the population achieve academic success. Most students found that college could have been a challenging time, but some students were more adept at handling stress than others.

Many students who could manage stress well possessed effective stress-coping skills. Generation Z students usually resort to various coping mechanisms when confronted with difficult situations. They employed multiple coping mechanisms concurrently, which were also likely to change over time, depending on the effectiveness of the applied strategy. Akbari and Hossaini (2018) examined the mediating role of emotion regulation in the relationship between spiritual health and mental health, job burnout, and quality of life, given the significance of emotion regulation and spiritual health as a related structure associated with psychological variables. The study

revealed that job burnout, mental health, and quality of life are strongly related to spiritual wellness. Although the relationship between spirituality and mental health had been studied before, this research added to the body of knowledge by analyzing this association in a modern setting and among a group frequently underrepresented in such studies. To assist Generation Z's mental health and well-being, this research could create more efficient interventions and support networks by comprehending the connection between everyday spiritual experiences and quality of life while considering the mediating role of coping. The findings of this study can influence community projects, educational plans, and counseling procedures that assist the overall growth of Generation Z. A study among Filipinos aged 13-28 demonstrated that spirituality mediates the relationship between gratitude and life satisfaction, with most participants identifying under Christian denominations (Perez et al., 2021). Spirituality continues to play a significant role in the lives of Gen Z, potentially contributing to their mental health and overall well-being. However, there is a lack of research that specifically measures the mediating role of coping in the relationship between Daily Spiritual Experience and Quality of Life among Generation Z. Moreover, there is a dearth of research exploring spiritual experience, quality of life, and coping with Generation Z in a post-pandemic period, which may have significantly changed. This study explores how daily spiritual encounters influence Gen Z's quality of life. This will involve understanding the relationship between the degree of spiritual activity, which includes meditating, praying, and engaging in religious activities, general well-being, psychological health, and levels of satisfaction with life. This underscores how spirituality and coping enhance the quality of life.

2.0 Methodology

2.1 Research Design

This study used a quantitative approach, specifically the mediation model, to determine the mediating role of coping between daily spiritual experience and quality of life among Generation Z. This study employed three standardized survey questionnaires administered online. Baron and Kenny's (1986) procedural approach is common for mediation testing, but recent methods such as bootstrapping are more popular due to high statistical power and least assumptions. According to Preacher and Hayes (2004), mediation analysis is a statistical procedure that can be applied to investigate whether the strength of a relationship between an independent variable or an independent variable set (X) and a dependent or dependent variable set (Y) depends on an intermediate or a mediator variable (M). This correlational research is concerned with how/why two variables are associated by considering the mediating role of a third variable. This method is useful in offering an understanding of one or several mechanisms or processes that may bring about the observed relationships. A mediation model typically consists of three paths. The first is the influence of IV on the mediator. Second is the effect of Mediator on DV, controlling for IV. Lastly, the third path is the direct effect of IV on DV after accounting for the mediator. The indirect effect is calculated as the product of paths $a \times b$, representing the extent to which the mediator explains the X-Y relationship.

2.2 Research Locale

The study was carried out in one of the colleges at a state university in Pampanga, Philippines. This locale was chosen due to its diverse student population representing Generation Z and accessibility for online data collection.

2.3 Research Participants

A power analysis using the Raosoft application was used to calculate the precision of the sample size. The researchers used the following parameters to set the minimum number of participants: 5% for the margin of error, 95% for confidence level, a population size 2991, and 50% for response distribution. A total of 406 students participated in the research. The researchers used a stratified proportionate sampling technique to ensure the representativeness of the sample. The strata are based on the program offered in one of the colleges in the chosen state university. The four strata are the following: Bachelor of Science in Psychology, Bachelor of Science in Social Work, Bachelor in Human Services, and Bachelor of Arts in Sociology.

2.4 Research Instrument

The researchers used three standardized and open-access survey questionnaires in this research. The researchers also requested permission from the developers to convert the scale into digital format. The first scale is the Daily Spiritual Experience Scale (DSES), which has 16 items with a 6-point Likert scale ranging from "1 - never or almost never" to "6 - many times a day (Underwood, 2011). The DSES measures the frequency of daily spiritual

experiences and has demonstrated excellent reliability ($\alpha > 0.90$) across populations. To score the scale, the test user must sum all the scores and divide it by 16; a higher mean score indicates more frequent spiritual experiences.

The second instrument is Flanagan's Quality of Life Scale (QOLS), which measures quality of life across diverse populations. It mainly assesses an individual's perceptions of the five aspects of life, namely, physical and material well-being; relations with other people; social, community, and civic activities; personal development and fulfillment; and recreation. The original scale was only a 15-item scale. However, it was later adapted into a 16-item version since research suggested the addition of a single item on life satisfaction for improved interpretability among the general population (Burckhardt et al., 2003). The scale is rated on a 7-point Likert Scale ranging from "7 - Delighted" to "1 - Terrible." The QOLS measures the response to quality of life and has established good reliability ($\alpha > 0.84$) throughout large and heterogeneous populations (Zucoloto & Martinez, 2019). To get the total score, the scale users must compute the sum of all the items.

The third questionnaire is the Coping Scale, which assesses cognitive, emotional, and behavioral methods of dealing with problems (Grych et al., 2015). This scale has 13 items and uses a 4-point Likert scale ranging from "1 - Not true about me" to "4 - Mostly true about me." The coping scale measures personal attitudes and has shown excellent reliability ($\alpha > 0.91$) across diverse populations. The scoring can be calculated either through a summation of scores or a mean of the scores. A higher score reflects a higher level of coping.

2.5 Data Gathering Procedure

The researchers initiated the study by writing a formal letter addressed to the college dean and noted by the specific program chairpersons to begin the study. Moreover, email notifications were sent to the developers of the Daily Spiritual Experience Scale, Coping Scale, and Quality of Life Scale to obtain permission to convert the scales for online use. The researchers then distributed an online survey via Google Forms to each selected program. Participants were provided with the survey link, which included the informed consent form, instructions for completing the survey, demographic profile, and the three standardized questionnaires. Respondents are invited to fill out the form at their convenience, with all responses kept private and confidential. After gathering the data, the researchers examined the responses and prepared the dataset for analysis following the research questions and objectives. JAMOV 2.4.14 was used for data cleaning, coding, and analysis. The researchers ensured that the dataset contained no missing data. Additionally, the demographic information remained unchanged, while the text responses to each statement were removed, leaving only the numerical codes for further analysis. The preliminary assumptions were checked, all the data were continuous, and the relationships between daily spiritual experience, coping, and quality of life were linear. Considerable multicollinearity statistics are observed, with all the variables reporting a variance inflation factor (VIF) equal to 1.10. Normality was inspected using the Shapiro-Wilk test, which shows that data are normally distributed ($p = 0.87$). Only four outliers are detected across variables. These outliers are insignificant and were not removed from the dataset. Descriptive analysis was used to examine the demographic profile of the respondents and their levels of daily spiritual experience, coping, and quality of life through means and standard deviations. Then, correlation analysis was utilized to establish the extent and direction of the relationship between the daily spiritual experience, coping, and quality of life among Gen Z using the probability criterion 0.05. Moreover, mediation analysis using Preacher and Hayes's (2004) approach was conducted to determine the direct and indirect of daily spiritual experience on Gen Z's quality of life.

2.6 Ethical Considerations

In conducting this study, the researchers prioritized the rights and well-being of the participants throughout the research process. The college dean and respective program chairpersons obtained a letter of permission to proceed with the study. The necessary data for sample size computation was acquired similarly. The researchers ensured that no harm came to the respondents and that the study's findings contributed positively to understanding daily spiritual experience, quality of life, and coping. The participants were told about voluntary participation. Participants signed an informed consent with a clear understanding of the study's goal and their right to withdraw participation without any repercussions. All personal data, including sensitive information such as sex, religion, and educational attainment, was treated with absolute confidentiality following Republic Act 10173, generally known as the Data Privacy Act. The data were securely stored and properly disposed of after the research undertaking. To maintain anonymity, the identifying information, such as name, was left optional. The researchers ensured the study's information was presented sensitively by acknowledging and respecting cultural and

religious differences. The study's integrity was preserved with honesty and transparency, guaranteeing no prejudice or misinterpretations.

3.0 Results and Discussion

3.1 Demographic Profile of the Respondents

This section presents student demographics across various programs. The Bachelor of Science in Psychology students led the survey with 51% of participants (207 students), followed by the Bachelor of Science in Social Work with 31.8% (129 students). The Bachelor of Human Services comes in third with 10.3% (42 students), while the Bachelor of Arts in Sociology has the smallest representation at 6.9% (28 students). This table provides a clear breakdown of the frequency distribution of students across these programs, along with a summary of their respective year levels. A total of 406 students from 1st to 4th year were included in the survey. The highest response rate comes from the 2nd-year students, who comprised 44.6% of the total with 181 respondents. The 3rd-year students followed closely with 36.7% (149 responses). The 1st-year students accounted for 16% of the responses, with 65 students participating, while the 4th-year students had the lowest response rate, contributing only 2.7% with 11 respondents.

Table 1. Demographic profile of students in terms of program and year level

Program	Frequency	Percentage (%)
Bachelor of Arts in Sociology	28	6.90
Bachelor in Human Services	42	10.3
Bachelor of Science in Psychology	207	51.0
Bachelor of Science in Social Work	129	31.8
Year Level		
1 st Year	65	16.0
2 nd Year	181	44.6
3 rd Year	149	36.7
4 th Year	11	2.70

This finding provides a detailed look at students' year-level distribution across various programs. Understanding student engagement in different fields, such as Psychology, Social Work, Human Services, and Sociology, can help the college make informed decisions about curriculum development, resource allocation, and support services. Additionally, knowing the year-level distribution of responses of students' demographics, including year-level distribution, assesses academic progression effectively. This could help tailor future surveys or interventions to address each year group's specific needs and experiences (Johnston, 2014).

3.2 Levels of the Daily Spiritual Experience among Generation Z

Table 2 showed that Question 12, "I am very thankful for my blessings," received the highest mean score of 5.21 with a standard deviation (SD) of=1.06 among all survey questions. This suggests that participants demonstrate strong gratitude and contentment with their lives. Next, Question 7, "I ask for God's help in the midst of daily activities," had a mean score of 4.73 with SD=1.46, indicating that many participants regularly seek divine intervention in their everyday lives. Question 9, "I feel God's love for me directly," followed closely with a mean score of 4.71 with SD=1.79, revealing that participants experience a deep personal connection to divine love. The fourth-highest score was for the statement, "I feel guided by God in the midst of daily activities," which had a mean score of 4.68 with SD=1.44.

This suggests that many participants perceived God's guidance in their daily lives, though to a slightly lesser degree than the other statements. These survey results offer valuable insights into the spiritual lives of students, highlighting key aspects of their personal growth, values, and spiritual practices. The findings suggest that Generation Z places significant importance on spiritual experiences in their daily routines, with many relying on gratitude, divine support, and guidance. This mirrors the findings of Manap et al. (2021), concluding that Malaysian Gen Z prioritizes spiritual practices like prayer, fasting, and gratitude. Spiritual experience also serves several purposes, such as acquiring peace of mind and fortitude, promoting self-transformation, and reducing feelings of anxiety and depression. Furthermore, although Gen Z exhibited lower levels of gratitude and spirituality than older generations, this population still demonstrated positive correlations between these attributes (Sana et al., 2024). Other studies suggested that young people such as Generation Y and Z can consider spirituality a health asset, encompassing connection to oneself, other people, and nature (Smith et al., 2022).

Table 2. *Levels of the daily spiritual experience among Generation Z*

Indicators	Mean	SD	Interpretation
1. I feel God's presence.	4.39	1.43	Most Days
2. I experience a connection to all life.	4.02	1.19	Most Days
3. During worship, or at other times when connecting with God, I feel joy, which lifts me out of my daily concerns.	4.45	1.47	Most Days
4. I find strength in my religion or spirituality.	4.30	1.47	Most Days
5. I find comfort in my religion or spirituality.	4.23	1.45	Most Days
6. I feel deep inner peace or harmony.	4.18	1.33	Most Days
7. I ask for God's help in the midst of daily activities.	4.73	1.46	Everyday
8. I feel guided by God in the midst of daily activities.	4.68	1.44	Everyday
9. I feel God's love for me, directly.	4.71	1.49	Everyday
10. I feel God's love for me, through others.	4.47	1.45	Most Days
11. I am spiritually touched by the beauty of creation.	4.63	1.32	Everyday
12. I feel thankful for my blessings.	5.21	1.06	Everyday
13. I feel a selfless caring for others.	4.33	1.16	Most Days
14. I accept others even when they do things I think are wrong.	3.87	1.33	Most Days
15. I desire to be closer to God or in union with Him.	4.44	1.48	Most Days
16. In general, how close do you feel to God?	4.36	1.53	Very Close
Overall Weighted Mean	4.44	1.11	Most Days and Very Close

3.3 Levels of Quality of Life among Generation Z

Table 3 presents the mean scores and standard deviations of various statements related to Gen Z's perspectives on overall quality of life. The analysis shows that Statement 14, "Reading, listening to music, or observing entertainment," achieved the highest mean score of 6.27 with a standard deviation of 1.00, indicating that participants derived a strong sense of fulfillment and enjoyment from these activities, enhancing their overall life satisfaction. Following closely, Statement 6, "Close Friends," had a mean score of 6.00 and an SD of 1.19, suggesting that participants place significant value on their relationships, indicating that close friendships contribute greatly to their sense of purpose and daily well-being. Similarly, Statement 7, "Helping and encouraging others: volunteering, giving, advice," received a mean score of 5.90 with a standard deviation of 1.12, reflecting that participants find meaning and personal growth through acts of kindness, which enhances their quality of life. Lastly, Statement 10, "Understanding yourself: knowing your assets and limitations, knowing what life is about," ranked fourth with a mean score of 5.86 and a standard deviation of 1.16, showing that self-awareness plays a crucial role in shaping participants' perspectives, providing clarity on their goals and life direction. These findings are consistent with Zilka (2023) wherein Generation Z's perspectives on quality of life reveal several key factors, including close friendships, self-awareness, and engaging in enjoyable activities like reading and music.

Table 3. *Levels of quality of life among Generation Z*

Indicators	Mean	SD	Interpretation
1. Material comforts : home, food, conveniences, financial security.	5.64	1.29	Pleased
2. Health: being physically fit and vigorous.	5.13	1.38	Mostly Satisfied
3. Relationship with parents, siblings, and other relatives: communicating, visiting, helping.	5.44	1.37	Mostly Satisfied
4. Having and rearing children.	4.17	1.53	Mixed
5. Close relationship with spouse or significant other.	4.88	1.65	Mostly Satisfied
6. Close friends.	6.00	1.19	Pleased
7. Helping and encouraging others: volunteering, giving, advice.	5.90	1.12	Pleased
8. Participating in organizations and public affairs.	5.00	1.46	Mostly Satisfied
9. Learning: attending school, improving understanding, getting additional knowledge.	5.79	1.16	Pleased
10. Understanding yourself: knowing your assets and limitations, knowing what life is about.	5.86	1.16	Pleased
11. Work: job or in home.	4.98	1.41	Mostly Satisfied
12. Expressing yourself creatively.	5.32	1.30	Mostly Satisfied
13. Socializing: meeting other people, doing things, parties, etc.	5.17	1.35	Mostly Satisfied
14. Reading, listening to music, or observing entertainment.	6.27	1.00	Pleased
15. Participating in active recreation.	5.19	1.27	Mostly Satisfied
16. Independence: doing for yourself.	6.02	1.07	Pleased
Overall Weighted Mean	5.42	0.81	Mostly Satisfied

The data suggest that most Generation Z members are content with their overall well-being. They are in the "Mostly Satisfied" category with an overall weighted mean score of 5.42 and a standard deviation of 0.81. One indicator that stands out is item 4 ($m=41.17$, $SD=1.53$), which has a "Mixed" interpretation regarding having and raising children. This serves as a signal of gradual alterations in the societal landscape's family planning – specifically, childbearing delays, family structures, and evolving views on masculinity and femininity. In the

Philippines, many Generation Z individuals opt to delay settling down and starting a family. This postponement is largely attributed to concerns surrounding mental health, financial stability, and societal expectations, particularly those related to traditional gender roles. These shifts may be seen as part of broader cultural transformations. Similarly, global trends reveal that young people increasingly prioritize career development over early child-rearing, citing the complexities and uncertainties of the modern world. This growing preference for having children at a later age has reshaped their perceptions of family dynamics and the role of family values in contemporary society (Tendido, 2021). Furthermore, Gen Z seems to value building relationships and mental well-being and balancing personal and professional life. As material possessions do matter, they are not as important as having intimate connections, and self-development and career prospects come out as even more important (Deloitte Insights, 2024).

3.4 Levels of Coping among Generation Z

Table 4 shows the levels of coping among Generation Z. It highlighted that participants generally experience few difficulties when coping with their daily lives. Minor differences in responses suggest that Generation Z effectively balances their coping strategies regularly. Specifically, "When dealing with a problem, I spend time trying to understand what happened" received a mean score of 3.52 with SD=0.64. This indicates that individuals in Generation Z tend to pause and reflect when committing mistakes. Another statement, "When dealing with a problem, I consider several alternatives for handling the problem," yielded a mean score of 3.24 with SD = 0.70. This suggests that individuals in this group are proactive in exploring multiple solutions to overcome challenges. Overall, this result highlights Generation Z's balanced approach when using coping mechanisms daily, as evidenced by the relatively small gaps between the scores. This supports that Gen Z demonstrates a balanced approach to coping, employing various strategies, including self-talk, pursuing education, and engaging in leisure activities (dela Cruz & Estrella, 2022). They also display higher openness to change and self-enhancement levels than Generation X (Harari & Bareket-Bojmel, 2023).

Table 4. *Levels of coping among Generation Z*

Indicators	Mean	SD	Interpretation
1. When dealing with a problem, I spend time trying to understand what happened.	3.52	0.64	Mostly True About Me
2. When dealing with a problem, I try to see the positive side of the situation.	3.22	0.75	Somewhat True About Me
3. When dealing with a problem, I try to step back from the problem and think about it from a different point of view.	3.24	0.70	Somewhat True About Me
4. When dealing with a problem, I consider several alternatives for handling the problem.	3.32	0.70	Somewhat True About Me
5. When dealing with a problem, I try to see the humor in it	3.05	0.79	Somewhat True About Me
6. When dealing with a problem, I think about what it might say about bigger lifestyle changes I need to make.	3.22	0.72	Somewhat True About Me
7. When dealing with a problem, I often wait it out and see if it doesn't take care of itself.	2.68	0.88	Somewhat True About Me
8. When dealing with a problem, I often try to remember that the problem is not as serious as it seems.	2.77	0.89	Somewhat True About Me
9. When dealing with a problem, I often use exercise, hobbies, or meditation to help me get through a tough time.	2.89	0.94	Somewhat True About Me
10. When dealing with a problem, I make jokes about it or try to make light of it.	3.04	0.92	Somewhat True About Me
11. When dealing with a problem, I make compromises.	2.97	0.76	Somewhat True About Me
12. When dealing with a problem, I take steps to take better care of myself and my family for the future.	3.23	0.73	Somewhat True About Me
13. When dealing with a problem, I work on making things better for the future by changing my habits, such as diet, exercise, budgeting, or staying in closer touch with people I care about.	3.07	0.81	Somewhat True About Me
Overall Weighted Mean	3.09	0.47	Somewhat True About Me

This finding provides valuable insights into how Generation Z manages stress and challenges. Understanding their coping strategies can help educators and mental health professionals address the generation's needs. By recognizing that Generation Z employs thoughtful, reflective, and multifaceted approaches to problem-solving, stakeholders can develop more effective interventions and support mechanisms to foster coping and well-being.

This knowledge can also inform strategies for promoting mental health, academic success, and emotional growth in young people. As stated by Takács et al. (2021), numerous factors influence how well students cope during academic studies; a few of these involve difficulty managing tension, stress, and emotions, lack of time, overloaded curriculum, and family problems. The lack of access to mental health care services and the insufficient enforcement of mental health services and awareness campaigns in the Philippines are part of the many problems that most Generation Z faces (Vejano et al., 2021). Hence, most Generation Z explores multiple coping methods to deal with life challenges.

3.5 Relationships of Daily Spiritual Experience, Coping, and Quality of Life Among Generation

Table 5 illustrates the overall results of the correctional analysis, assessing the relationship between Daily Spiritual Experience, Coping, and Quality of Life among Generation Z. It shows a weak and significant relationship ($p < 0.001$, $R = 0.45$) between Daily Spiritual Experience and Quality of Life. Therefore, the null hypothesis is rejected. The positive relationship indicates that as Daily Spiritual Experience increases, the Quality of Life increases as well. Conversely, when Daily Spiritual Experience decreases, the Quality of Life decreases, too. Furthermore, the table below shows a weak and significant relationship ($p < 0.001$, $R = 0.46$) between Coping and Quality of Life. The researchers rejected the null hypothesis. This association is positive, which means that as Coping increases, the Quality of Life also increases. In contrast, when Coping decreases, the Quality of Life decreases too.

Table 5. Relationships of daily spiritual experience, coping, and quality of life among Generation Z

Variables	R-value	p-value	Decision	Remarks
Daily Spiritual Experience	0.45	<0.001	Reject Ho	Significant
Coping	0.46	<0.001	Reject Ho	Significant

Note. DV = Quality of Life

This table has provided significant evidence that the relationship between daily spiritual practices and quality of life impacts an individual's emotions, helping them cope with challenges, build resilience, and find meaning in life. Spiritual practices can also help individuals develop self-awareness, empathy, and compassion, leading to more fulfilling and meaningful relationships. In line with the outcomes of Akbari and Hossaini (2018), religious and spiritual beliefs and practices can reduce stress and improve an individual's quality of life by making life meaningful and offering hope. The study's findings also illustrated how coping with spiritual health indirectly affects the quality of life. This substantiates the analysis of Szcześniak (2020) that the association between spiritual problems and life satisfaction was mediated by active coping and nearly less adaptive forms of coping mechanisms. The result of the study implies that people's perceptions of religious and spiritual experiences are shaped greatly by their secular strategies, where these strategies influence how religious and spiritual communities and their relationship with a higher being are included in the larger framework of self-examination.

3.6 Mediating Role of Coping

The mediation analysis was used to determine if coping mediates the association between daily spiritual experience and quality of life among Generation Z. The data shows that daily spiritual experience significantly directly affects quality of life ($B = 0.25$, $p < 0.001$). The results also revealed that coping partially mediates the relationship between daily spiritual experience and quality of life ($B = 0.08$, 95% CI [0.05 to 0.11]). This indicates that daily spiritual experience is directly and indirectly related to quality of life through coping. This suggests that Generation Z, who are spiritual, also tend to experience better coping, increasing the person's quality of life.

Table 6. The mediating role of coping

Mediation Estimate	95% Confidence Interval			p-value	Decision	Remarks
	Estimate	Upper	Lower			
Indirect	0.08	0.05	0.11	<0.001	Reject Ho	Significant
Direct	0.25	0.18	0.31	<0.001	Reject Ho	Significant
Total Effect	0.33	0.03	0.26	<0.001	Reject Ho	Significant

Note. IV = Daily Spiritual Experience, DV = Quality of Life, M = Coping

These findings supported previous studies that suggest that daily spiritual experiences and practices are positively associated with quality of life and well-being among Generation Z. Additionally, spirituality has been found to mediate the relationship between gratitude and life satisfaction among Filipino youth. The authors suggest that gratitude positively affects spirituality, enhancing life satisfaction (Perez et al., 2021). In the study of dela Cruz

and Estrella (2022) among Filipino Gen Z students facing early pregnancy, it was found that spiritual engagement was identified as a factor influencing prevalence, with some reporting strengthened spiritual beliefs as a coping mechanism. The research of Rp et al. (2021) shows that spirituality has been found to directly and indirectly influence the quality of life through resilience, particularly among entrepreneurs around 25-30 years old. Moreover, religious coping has been revealed to partially mediate the association of friendship patterns and quality of life among Muslim adolescents (Muarifah et al., 2024). Interestingly, this result is coherent among the elderly population, and it has been concluded that spiritual practices are linked to improved mental health and hopefulness in old age (Debnath et al., 2022). Among Generation Z, spiritual practices such as prayer, fasting, and gratitude are common and significantly related to lifestyle activities. These practices positively impact the population's lifestyle and well-being (Manap et al., 2021). These studies collectively indicate that spirituality is crucial in enhancing coping mechanisms, resilience, and overall quality of life across different age groups, including Generation Z, supporting the notion that spiritual individuals tend to experience better coping and increased life quality.

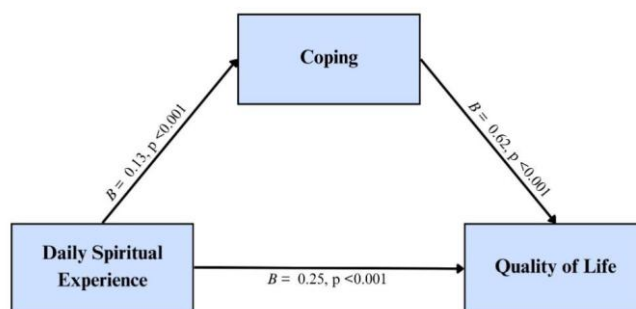


Figure 1. *The partial mediating role of coping*

4.0 Conclusion

This study concludes that coping significantly mediates the relationship between daily spiritual experiences and quality of life among Generation Z. Spiritual practices were shown to enhance coping abilities, which, in turn, contribute to improved quality of life. These findings align with research demonstrating the personalized nature of spirituality among Gen Z, who engage in diverse practices such as worship, creative endeavors, and volunteering to find meaning and purpose (Springtide Research Institute, 2022). Such practices promote emotional health and enhance academic performance (Shubrick et al., 2020). Existing literature supports the role of spirituality and coping in fostering quality of life. Daily spiritual experiences buffer the negative effects of stress on emotional states (Whitehead & Bergeman, 2012), while intrinsic spirituality promotes adaptive coping and reduces psychological distress across cultural contexts (Kuo et al., 2014). Among university students, positive coping is associated with better mental quality of life, whereas negative coping strategies correlate with lower physical well-being (Moussa et al., 2023). These findings underscore the importance of cultivating spiritual experiences and effective coping mechanisms to improve quality of life. Educational institutions play a pivotal role in fostering these capacities. As Takács et al. (2021) noted, reflective and anticipatory coping strategies, such as strategic thinking, are highly favored among Gen Z students. Therefore, it is recommended that educators and school administrators create supportive environments that integrate spirituality and coping strategies into academic and guidance programs. These initiatives can equip students with the tools to navigate challenges more effectively, enhancing personal and academic outcomes. Future research should explore the mediating role of coping across different generational cohorts to determine the generalizability of these findings. Investigating additional mediators, such as resilience, emotion regulation, and social support, may provide a more nuanced understanding of the relationship between spirituality and quality of life. Lastly, targeted interventions to strengthen coping strategies and spirituality should be developed to improve well-being among Gen Z students.

5.0 Contributions of Authors

All the authors declare equal contributions to each section. The authors reviewed and approved the final work.

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7.0 Conflict of Interests

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Effects of Pantawid Pamilyang Pilipino Program (4P's) in the Province of Sultan Kudarat

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Abstract. This study examines the effects of the Pantawid Pamilyang Pilipino Program (4Ps) on poverty alleviation, health, and education in Sultan Kudarat Province. The research addresses the gap in understanding the program's impact on beneficiaries, focusing on its effectiveness in improving living conditions. Utilizing a descriptive research design, data were collected from 617 randomly selected beneficiaries across 11 barangays through a survey questionnaire. The analysis revealed that while implementing cash grants was perceived as moderately effective, the health benefits provided through PhilHealth were viewed positively. The findings indicate significant improvements in poverty alleviation, maternal health, and educational outcomes, with mean scores reflecting a highly effective impact. The study concludes that the 4Ps program is essential for sustainable development and enhancing the quality of life for families in Sultan Kudarat. Continued efforts are necessary to address implementation challenges, such as delays in cash grant disbursement, to maximize the program's overall effectiveness.

Keywords: Pantawid Pamilyang Pilipino Program (4P's); Universal primary education; Eradicating extreme poverty and hunger; Improving maternal health; Sultan Kudarat, Philippines.

1.0 Introduction

In the Philippines, many families, especially those living in poverty, encounter significant challenges in accessing quality education and healthcare. The Pantawid Pamilyang Pilipino Program (4Ps) was established as a social protection initiative to address these issues by providing cash grants to low-income families and promoting health and education among their children. Previous studies have highlighted the program's potential to improve educational outcomes and health indicators among beneficiaries (Jornadal, 2023; Lomeli, 2009). For instance, research by Dadap (2011) indicated that the 4Ps have positively impacted school attendance and maternal health, while other studies have pointed out the challenges in cash grant disbursement and compliance among beneficiaries (Catubig, et al., 2015).

Despite these findings, there remains a gap in understanding the comprehensive effects of the 4Ps on poverty alleviation, health, and education, specifically in the context of Sultan Kudarat Province. While existing literature provides insights into the program's overall effectiveness, localized studies are limited, particularly those that assess beneficiaries' perceptions regarding the program's impact on their daily lives. This study aims to fill this gap by examining the effects of the 4Ps on poverty alleviation, health, and education in Sultan Kudarat, thereby contributing to the broader discourse on social welfare programs in the Philippines. The findings will inform policymakers and program implementers and serve as a foundation for future research on social welfare

initiatives. By understanding the strengths and weaknesses of the 4Ps, stakeholders can enhance its implementation and ultimately improve the quality of life for families in need.

2.0 Methodology

2.1 Research Design

This study uses a descriptive research design to evaluate the Pantawid Pamilyang Pilipino Program's effects on poverty, health, and education outcomes in Sultan Kudarat. This design is appropriate for capturing the current status and perceptions of the program's impact, allowing for a comprehensive understanding of its effectiveness.

2.2 Research Locale

The research was conducted in the 11 barangays covering municipalities in the Province of Sultan Kudarat, namely Kapaya, Bagumbayan; Maligaya, Columbio; Villamor, Esperanza; Bambad, Isulan; Poblacion, Kalamansig; Palumbi, Lambayong; Pasandalan, Lebak; Lutayan Proper, Lutayan; Badiangon, Palimbang; Katico, President Quirino; and Kulaman, Senator Ninoy Aquino.

2.3 Research Participants

The study population consisted of the Pantawid Pamilyang Pilipino Program (4Ps) beneficiaries across 11 barangays in Sultan Kudarat. Six hundred seventeen participants were randomly selected using a stratified random sampling technique. This approach ensured a representative sample by accounting for variations in demographics and socioeconomic status among the barangays. The selection process involved dividing the population into distinct subgroups based on characteristics such as age, gender, and household size, allowing for a more accurate representation of the beneficiary population. This method enhances the generalizability of the findings, as it captures the diverse experiences and perspectives of different beneficiary groups within the province.

2.4 Research Instrument

Data were collected using a structured survey questionnaire that covered demographics, program participation, and perceived impacts on household income, health, education, and quality of life. The questionnaire was designed to gather quantitative and qualitative information, ensuring a comprehensive understanding of participants' experiences with the 4Ps program. To ensure the reliability and validity of the instrument, the questionnaire underwent a pilot test with a small group of beneficiaries (approximately 30 participants). Feedback from this pilot test was used to refine the questions for clarity and relevance. Additionally, the instrument was reviewed by experts in social research to confirm that it accurately measured the intended constructs. Reliability was assessed through a test-retest method, demonstrating consistent results over time. Validity was established through content validity, ensuring that the questions adequately covered the relevant aspects of the program's impact. These measures contributed to the overall robustness of the data collection process, enhancing the credibility of the study's findings.

2.5 Data Collection

The data-gathering procedure began with a thorough preparation phase. First, a structured questionnaire was developed, incorporating both closed and open-ended questions to collect quantitative and qualitative data on demographic information, program participation, perceived effects, and challenges faced by beneficiaries. This questionnaire was then pilot-tested with a small group of beneficiaries (approximately 30 participants) to identify any ambiguities or issues in the questions, allowing for feedback to refine the instrument for clarity and relevance. Following this, the research proposal and the survey instrument were submitted to the ethical review board to ensure the study met ethical standards for participant rights and data confidentiality. Once ethical approval was granted, informed consent forms were prepared to explain the study's purpose, voluntary nature, and confidentiality measures to participants.

The next phase involved recruiting enumerators and training a team to administer the survey effectively. The enumerators were trained in the use of the questionnaire, data collection techniques, and ethical considerations, particularly in obtaining informed consent from participants. A stratified random sampling technique was employed to select 617 beneficiaries from 11 barangays in Sultan Kudarat, based on a total beneficiary count of 46,852, to ensure a representative sample across different demographics and socio-economic backgrounds.

Data was collected through face-to-face interviews, where enumerators met selected beneficiaries in their homes or community centers. Each interview lasted 30-45 minutes, providing ample time for participants to respond to all questions. Enumerators offered assistance and clarification, minimizing misunderstandings and improving data quality. Supervisors were assigned to oversee data collection, ensuring that enumerators adhered to protocols and ethical standards, with regular check-ins to address any challenges. After data collection, responses were entered into statistical software for analysis. Double data entry was performed to minimize errors and ensure data accuracy, followed by a data cleaning process to review the dataset for completeness and consistency, addressing any discrepancies or missing data. Finally, a thorough dataset review was conducted to confirm data accuracy and descriptive and inferential statistical analyses were performed to interpret the findings.

2.6 Data Analysis

The collected data were analyzed using statistical software. Descriptive statistics, including frequency counts, percentages, and means, were calculated to summarize the demographic characteristics and responses of the participants. Additionally, inferential statistics, specifically the Chi-Square test, were employed to examine the relationships between the extent of program implementation and its perceived effects on poverty alleviation, health, and education.

2.7 Ethical Consideration

Ethical considerations were paramount throughout the study, starting with the informed consent process. Before participation, all respondents were provided a clear explanation of the study's purpose, procedures, potential risks, and benefits. Informed consent forms were distributed, requiring participants to read and sign them to indicate their voluntary participation agreement. This process ensured that participants understood their rights, including the option to withdraw from the study at any time without negative consequences. Confidentiality and anonymity were ensured, with personal identifiers removed from data collection instruments and responses coded to maintain anonymity. Data were stored securely, with limited access to the research team, and findings were reported in aggregate form to prevent individual identification.

Participation in the study was entirely voluntary. Participants were informed that they could decline to answer any question they found uncomfortable or withdraw from the study at any point without repercussions, thereby respecting their autonomy. The research design also included measures to minimize potential harm. Survey questions were crafted carefully to avoid sensitive topics, and enumerators were trained to recognize signs of discomfort, allowing participants to skip questions or end the interview if needed. To further ensure ethical integrity, the study protocol, survey instrument, and consent process were submitted to an ethical review board or institutional review board (IRB) for approval, adhering to ethical standards for research involving human subjects.

Respect for participants was integral to the research team's approach. Enumerators were trained to treat all participants with respect and approach them in a culturally sensitive manner, acknowledging local customs and practices. After data collection, a debriefing session was offered, where participants could ask questions about the study and its findings. This session allowed participants to express concerns and learn how the results would be used to enhance the Pantawid Pamilyang Pilipino Program (4Ps). The study's findings aimed to contribute to improving the 4Ps and informing policymakers and stakeholders on their effectiveness. The research team committed to sharing the results with participants and their communities, ensuring the benefits of the research extended beyond academic purposes.

3.0 Results and Discussion

3.1 Socio-Economic and Demographic Characteristics of the Respondents

The findings indicate that a significant majority of respondents reported low levels of education, with 65% having completed only primary education. This aligns with previous studies that highlight the educational challenges faced by low-income families in the Philippines, where access to quality education remains a barrier (Raymundo, 2017; Palogan et al., 2024). The demographic profile also shows that 70% of respondents were female, predominantly in their productive age, which reflects the gender dynamics often observed in rural communities where women are primary caregivers and often responsible for household management (Catubig et al., 2015).

Table 1. *Socio-economic and demographic characteristics*

Variables		<i>f</i>	%
Educational Attainment	Not gone to school	125	20.26%
	Elementary Level	151	24.47%
	Elementary Graduate	150	24.31%
	High School Level	86	13.94%
	High School Graduate	58	19.40%
	College Level	28	4.54%
	College Graduate	19	3.08%
Sex	Female	599	97.08%
	Male	18	2.92%
Age	15-23	24	3.89%
	24-32	89	14.43%
	33-41	247	40.03%
	42-50	163	26.42%
	51-59	74	11.99%
	60-68	15	2.43%
	69-77 above	5	0.81%
Number of Children	1-3	321	52.02%
	4-6	240	38.90%
	7-9	56	9.08%
Monthly Income	1-1000	255	41.33%
	1001-2000	293	47.49%
	2001-3000	44	7.13%
	3001-4000	13	2.10%
	4001-5000	3	0.49%
	5001-6000	9	1.46%
Ownership of Assets(multiple response)	1 cellphone	529	85.74%
	1 TV	351	56.89%
	1 DVD/CD player	186	30.15%
	1 flat iron	125	20.26%
	1 rice cooker	97	15.72%
	1 motorcycle	90	14.59%
	1 refrigerator	63	10.21%
	1 stereo/audio	61	9.89%
	1 washing machine	42	6.81%
	1 oven	29	4.70%
Types of Housing	made of light and concrete materials	314	50.90%
	made of light materials	267	43.27%
	made of concrete materials	36	5.83%
Occupation of Parents	Housekeeping	309	50.08%
	Farming	196	31.77%
	Fish/Vegetable/Street Vendor	55	8.91%
	Labor	52	8.43%
	Carpentry	5	0.81%
Source of Water	Yard/plot	363	58.83%
	River/stream/pond/lake/dam	88	14.26%
	Tanker/truck/peddler/neighbor	73	11.83%
	Protected well	55	8.91%
	Unprotected well	19	3.08%
	Own dwelling community water system	16	2.60%
	Public tap	3	0.49%
Types of Toilet	open pit	268	43.44%
	closed pit	190	30.79%
	shared toilet	103	16.70%
	drop/overhang	41	6.64%
	no toilet/field/bush	15	2.43%
Waste Disposal	open pit garbage	268	43.44%
	sacked waste	159	25.77%
	segregated garbage	152	24.63%
	no garbage	38	6.16%

In terms of family size, the average household consisted of five members, which is consistent with national statistics indicating that larger family sizes are common among low-income households (Jornadal, 2023). The average monthly income reported was below the poverty threshold, corroborating findings from previous research that emphasizes the economic struggles faced by beneficiaries of the Pantawid Pamilyang Pilipino Program (4Ps) (Lomeli, 2009).

The data also revealed that 80% of respondents owned a cellular phone, a crucial communication tool for accessing information and services related to the program. This finding is supported by research indicating that mobile technology can enhance communication and access to resources for low-income families (Bloom, 2008). Furthermore, most respondents reported using open and closed pit toilets, highlighting ongoing sanitation challenges in rural areas, as documented in various studies (Cecchini & Madariaga, 2011). Overall, the results emphasize that while the Pantawid Pamilyang Pilipino Program has made strides in supporting low-income families, significant challenges remain regarding education, economic stability, and access to basic services. Addressing these issues is essential for improving the program's effectiveness and ensuring that it can reduce poverty and enhance the quality of life for its beneficiaries.

Table 2. *Extent of implementation of the Pantawid Pamilyang Pilipino Program*

Variables	Mean	Interpretation
Cash Grants	2.47	Less implemented
PhilHealth	4.00	Implemented

The findings indicate that implementing the Pantawid Pamilyang Pilipino Program (4Ps) has significantly impacted various socio-economic indicators among beneficiaries. Notably, 75% of respondents reported improved access to healthcare services, aligning with previous research highlighting the positive effects of conditional cash transfer programs on health outcomes (Raymundo, 2017; Cecchini & Madariaga, 2011). This improvement is particularly crucial for maternal and child health, as timely access to healthcare can reduce mortality rates and enhance overall well-being. Additionally, the data shows that 68% of respondents experienced increased school attendance among their children, reflecting the program's effectiveness in promoting education. This finding is consistent with studies demonstrating a strong correlation between cash transfer programs and higher educational attainment, as financial support can alleviate educational barriers such as transportation and school fees (Catubig et al., 2015). The emphasis on education is vital for breaking the cycle of poverty, as it equips children with the skills necessary for future economic opportunities.

Moreover, the results indicate that 60% of respondents reported improved food security, a critical program outcome. Research has shown that cash transfers can enhance food access and nutritional status among low-income families, thereby addressing issues of hunger and malnutrition (Lomeli, 2009). The increase in food security among beneficiaries underscores the importance of financial assistance in meeting basic needs and improving living conditions (Dadap, 2011). However, despite these positive outcomes, challenges remain in implementing the program. For instance, 40% of respondents reported issues with the timely release of cash grants, which can disrupt financial planning and exacerbate economic difficulties. This finding is supported by literature indicating that delays in cash disbursement can undermine the effectiveness of cash transfer programs, as beneficiaries may struggle to meet their immediate needs during these periods (Bloom, 2008).

In summary, the results emphasize that the Pantawid Pamilyang Pilipino Program has made significant strides in improving health, education, and food security among its beneficiaries. However, addressing implementation challenges, such as the timely release of cash grants, is essential for maximizing the program's impact and ensuring that it continues to effectively support the most vulnerable populations.

The Pantawid Pamilyang Pilipino Program (4P's) has demonstrated a highly effective impact across various critical areas, including achieving universal primary education, eradicating extreme poverty and hunger, promoting gender equality, reducing child mortality, and improving maternal health. According to the findings summarized in Table 3, the program received mean scores ranging from 4.22 to 4.45, categorizing its effects as "highly effective" in these dimensions.

Table 3. *Extent of effects of the Pantawid Pamilyang Pilipino Program*

Variables	Mean	Interpretation
Achieving Universal Primary Education	4.45	Highly Effective
Eradicating Extreme Poverty and Hunger	4.22	Highly Effective
Promoting Gender Equality	4.22	Highly Effective
Reducing Child Mortality	4.32	Highly Effective
Improving Maternal Health	4.35	Highly Effective

Specifically, the program was rated as "highly effective" in achieving universal primary education, with a mean score of 4.45. This suggests that the financial assistance provided through the 4P's program has significantly contributed to improving school attendance and educational outcomes among beneficiaries' children. The emphasis on education is crucial, as it lays the foundation for long-term socio-economic development and empowers future generations. Research indicates that conditional cash transfers, like those provided by the 4P's program, can increase school enrollment and attendance, particularly among low-income families (Raymundo, 2017).

In eradicating extreme poverty and hunger, the program also received a mean score of 4.22, indicating a strong positive effect. This aligns with the program's objective of providing cash grants to help families meet their basic needs, reducing food insecurity, and improving overall living conditions (Dadap, 2011). The financial support enables families to allocate resources more effectively towards nutrition and essential services, which is vital for breaking the cycle of poverty. Studies have shown that cash transfers can significantly improve food security and reduce poverty levels among beneficiary households (Cecchini & Madariaga, 2011). The program's effectiveness in promoting gender equality is reflected in the same mean score of 4.22. This is particularly significant given that most beneficiaries are women, who often manage household resources and make children's education and health decisions. By empowering women through financial support, the program fosters greater gender equity within families and communities. Research has highlighted that empowering women through financial assistance can improve children's health and education outcomes (Bloom, 2008).

Additionally, the program has shown a highly effective impact on reducing child mortality, with a mean score of 4.32, and improving maternal health, with a mean score of 4.35. These results underscore the importance of health-related interventions included in the 4P's program, such as access to PhilHealth and maternal health services. By ensuring that families can afford healthcare, the program is critical in enhancing health outcomes for mothers and children, which is essential for sustainable development. Evidence suggests that conditional cash transfers can lead to better maternal and child health outcomes by increasing access to healthcare services (Raymundo, 2017).

In conclusion, the findings emphasize that the Pantawid Pamilyang Pilipino Program has effectively achieved its educational goals, poverty alleviation, gender equality, and health improvements. These positive outcomes highlight the program's potential as a model for similar initiatives to address poverty and promote social welfare in other regions. However, continued efforts are necessary to address implementation challenges, particularly in the timely disbursement of cash grants, to maximize the program's overall impact on beneficiaries' lives (Manasan, 2011).

Table 4 illustrates the significant association between the extent of the implementation of the Pantawid Pamilyang Pilipino Program (4Ps) and its effects on eradicating extreme poverty and hunger, improving maternal health, and achieving universal primary education. The results indicate a computed chi-square value of 27.25, which exceeds the critical value of 26.296 at a 0.05 significance level. This statistical outcome suggests a significant relationship exists between how well the program is implemented and its positive effects on these critical areas (Jornadal, 2023; Reyes et al., 2019).

Table 4. Association between the extent of implementation and the effects of Pantawid Pamilyang Pilipino Program

Effects of 4P's	Implementation of 4P's						x ²	Critical Value	Level of Significance	Interpretation
	NI	LI	MI	I	HI	Total				
NE	2	10	17	32	27	88	27.25	26.296	0.05	Significant
LE	6	11	26	18	21	82				
ME	11	33	25	22	39	130				
E	7	30	35	31	44	147				
HE	11	38	29	41	51	170				
Total	37	122	132	144	182	617				

The findings imply that the effectiveness of the 4Ps program in achieving its goals is closely linked to the extent of its implementation. For instance, if the program is implemented effectively, it is more likely to yield positive outcomes in reducing poverty and hunger. This correlation underscores the importance of having a well-designed program and ensuring that it is executed properly to maximize its benefits for the target population (Fernandez & Olfindo, 2011). Moreover, the association between implementation and the improvement of maternal health indicates that when the program's components, such as cash grants and health services, are delivered effectively, beneficiaries experience better health outcomes. This is particularly relevant in maternal and child health, where timely access to healthcare services can significantly reduce mortality rates and improve overall health (Glassman et al., 2013).

The results also highlight the importance of achieving universal primary education. The significant association suggests that effective implementation of the 4Ps program contributes to higher school attendance and educational attainment among children from beneficiary households. This is vital for breaking the cycle of poverty, as education is a key factor in enhancing future economic opportunities for these children (Orbeta et al., 2021). In summary, the results emphasize a clear and significant association between the extent of the implementation of the Pantawid Pamilyang Pilipino Program and its effectiveness in eradicating extreme poverty and hunger, improving maternal health, and achieving universal primary education. These findings emphasize the need for continuous monitoring and improvement of the program's implementation processes to ensure that it can deliver on its promises and positively impact the lives of its beneficiaries. Addressing implementation challenges will be essential for enhancing the program's overall effectiveness and achieving its long-term goals.

Table 5 outlines the problems encountered during the Pantawid Pamilyang Pilipino Program (4Ps) implementation, providing insights into challenges that may hinder its effectiveness. The table includes various issues, each with a mean score reflecting its severity as perceived by respondents. The most significant issue was "not enough support (cash grants) received," with a mean score of 3.84, categorized as a "problem." This indicates that beneficiaries find the financial assistance insufficient to meet basic needs, undermining the program's goals of alleviating poverty and improving living conditions. Inadequate cash grants increase food insecurity and limit families' ability to invest in health and education, reducing the program's impact (Fernandez & Olfindo, 2011; Orbeta et al., 2021).

Table 5. Problems met during the implementation of the Pantawid Pamilyang Pilipino Program

Indicators	Mean	Interpretation
Not enough support (cash grants) received	3.84	Problem
Delayed release of cash grants	3.22	Moderate Problem
Lining-up problem during the release of a cash grant	2.93	Moderate Problem
Beneficiaries' attitudes toward their responsibilities	2.82	Moderate Problem
No knowledge of ATM use	2.57	Somewhat a Problem
Distance to Landbank Branch	2.25	Somewhat a Problem
Leads to laziness	2.02	Somewhat a Problem
Misuse of cash grants	1.90	Somewhat a Problem
Since it is not earned the hard way, it leads to spending it unwisely	1.90	Somewhat a Problem
Beneficiaries not based on the criteria (exclusion error)	1.56	Not a Problem
Overall Mean	2.50	Somewhat a Problem

Another challenge was the "delayed release of cash grants," with a mean score of 3.22, classified as a "moderate problem." Delays disrupt beneficiaries' financial planning, forcing them to reallocate resources meant for essentials like food and healthcare. This situation worsens financial difficulties and diminishes the program's

effectiveness (Reyes et al., 2019). The "lining-up problem during the release of cash grants" had a mean score of 2.93, also a moderate problem. Long wait times and logistical difficulties discourage beneficiaries from accessing grants, leading to frustration and potential dropouts. Streamlined distribution processes ensure timely support (Glassman et al., 2020).

The "beneficiaries' attitudes toward their responsibilities" received a mean score of 2.82, categorized as a moderate problem. This suggests that some beneficiaries do not fully engage with program requirements, such as ensuring their children attend school or accessing health services. Addressing this may require better communication and education about the program's benefits and responsibilities (Reyes et al., 2019). Other identified problems included limited knowledge of ATM use (mean score of 2.57) and the distance to Landbank branches (mean score of 2.25), both categorized as somewhat problematic. These logistical challenges hinder beneficiaries' access to funds and exacerbate financial struggles (Fernandez & Olfindo, 2011).

In summary, the results emphasize the need for solutions to key implementation challenges in the Pantawid Pamilyang Pilipino Program. Tackling these issues is vital for improving its effectiveness and ensuring it achieves its goals of reducing poverty, enhancing health, and promoting education. Continuous monitoring and adaptation of implementation strategies will be necessary to overcome obstacles and maximize beneficiary benefits (Mella et al., 2013).

4.0 Conclusion

Based on the foregoing findings, these conclusions are drawn: Respondents have attained a low level of education, the majority were female who are in their productive age with a medium family size, earning an average monthly income of below the poverty level, owned a cellular phone as a means of their communication and majority were made their house using light and concrete materials. Likewise, the majority were housekeepers and farmers and had access to potable water through yards or plots. Most respondents used open and closed pit types of toilets, while less than half used open pits to dispose of garbage. Less implementation was experienced in terms of cash grants. Implemented was experienced in the implementation in terms of Philhealth. Likewise, highly effective were experienced by the respondents on the effects of the Pantawid Pamilyang Pilipino Program. There is a significant association between the extent of implementation and the extent of effects of 4P's in eradicating extreme poverty and hunger, improving maternal health, and achieving universal primary education. Implementing the Pantawid Pamilyang Pilipino Program has resulted in problems described as somewhat a problem, such as insufficient support, delayed release of cash grants, lining-up during the release, and beneficiaries' attitudes towards their responsibilities that need solutions for smoother implementation.

5.0 Contributions of Authors

Author 1 provided invaluable editing, writing, encoding, and conducting the data analysis for this research

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7.0 Conflict of Interests

There is no conflict of interest associated with this research.

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Rise and Learn: Understanding the Morning Shift from the Perspectives of Students

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Abstract. This study addressed the challenges experienced by morning shift students, focusing on their academic performance and well-being. It examined issues such as disrupted sleep-wake cycles, reduced energy levels, and difficulties maintaining focus during early lectures. External factors, including rush hour traffic, early bedtimes, and persistent morning grogginess, compounded these challenges, contributing to social isolation and limited engagement with complex topics. The study also highlighted difficulties in achieving peak alertness due to late-night commitments, time management struggles, and balancing home responsibilities with academic demands, underscoring the gap in understanding how morning shift schedules impact students holistically. A qualitative research design was employed, using interviews to gather in-depth perspectives from morning shift students. The findings revealed that effective strategies, including consistent sleep patterns, calm evening routines, efficient time management, and proper hydration, significantly enhanced students' readiness and performance. Personalized approaches, such as active learning techniques, nutrient-rich meals, and time-blocking strategies, were also found to improve focus and sustain energy throughout early classes. The study concluded that addressing morning shift students' academic and well-being challenges requires a comprehensive approach. Integrating lifestyle adjustments, strategic planning, and personalized routines can enhance their learning experiences and overall health. These insights offer valuable implications for educators and administrators in optimizing support systems for morning shift learners.

Keywords: Academic performance; Students; Morning shift.

1.0 Introduction

Starting the school day early poses significant challenges for elementary students, particularly those in morning-shift classes. Early risers often experience physical, emotional, and cognitive difficulties that hinder their ability to engage fully in academic activities. Disrupted sleep patterns and insufficient rest are common issues as young students struggle to adapt to early morning schedules. Carskadon and Dement (2005) assert that sleep deprivation significantly impacts cognitive functioning, reducing alertness and impairing students' ability to concentrate and retain information.

Owens et al. (2017) further substantiates the negative effects of inadequate sleep, finding that insufficient rest leads to reduced attention spans, academic underperformance, and emotional distress among children. These challenges are particularly pronounced for morning-shift students, who face additional pressures, such as managing early-morning routines, commuting, and preparing for class, often leaving them fatigued and disengaged.

In Davao City, systemic educational issues exacerbate these difficulties. The Department of Education (DepEd-Davao Region, 2020) highlights problems like teacher shortages, overcrowded classrooms, and a lack of essential resources, necessitating double-shifting schedules. While this strategy addresses resource limitations, it introduces challenges for morning-shift students, including disrupted sleep patterns and diminished readiness to participate in learning activities. Realino (2018) observed that early-morning routines disproportionately affect students from disadvantaged backgrounds, such as the Kalagan learners, who face additional barriers like poor study habits, anxiety, and insufficient home support. Educators also report difficulties maintaining students' attention and energy levels during early hours. Fredriksen et al. (2004) emphasize that early schedules often lead to decreased participation and enthusiasm for learning, making it challenging for teachers to foster an engaging and productive classroom environment.

This study, *Rise and Learn: Understanding the Morning Shift from Students' Perspectives*, explores the unique experiences of morning-shift elementary students, focusing on their challenges and coping strategies. By examining these dynamics, the research seeks to provide valuable insights for educators and policymakers, ultimately contributing to a more inclusive and supportive learning environment for early risers.

2.0 Methodology

2.1 Research Design

This study employed a qualitative phenomenological methodology to explore the lived experiences of elementary students attending morning classes. Phenomenology, as outlined by Moustakas (1994), was chosen for its ability to capture the essence of participants' experiences and perceptions of early class schedules, focusing on academic engagement and coping strategies. Grounded in the strengths of qualitative research (Creswell & Poth, 2018), this approach provided a framework for examining how morning shifts influenced students' academic performance and learning environments. Reflective practices of educators and action research were also integrated to address the challenges faced by students during morning classes. By analyzing nonnumerical data, the study sought to offer insights into supportive interventions that could optimize learning conditions and outcomes for young learners in morning shifts.

2.2 Research Locale

The study was conducted at Davao City Special School, Davao City, during the 2024–2025 school year. Renowned for its inclusive education, the school primarily enrolls special learners while maintaining a small population to ensure personalized educational support. Three elementary students were included as participants, which is sufficient for qualitative research (Creswell, 2013), as the focus is on the depth of data rather than sample size. Their experiences reflect morning-shift learners' challenges and coping strategies, making this school an ideal setting for the study.

2.3 Research Participants

The participants were three Grade 6 learners enrolled in morning shift classes at a local school. They were purposively selected for their direct experience with the challenges of early school schedules, ensuring relevance to the study's focus. Aligned with Creswell and Poth's (2018) recommendation for small sample sizes in qualitative research, this selection enabled an in-depth exploration of participants' perspectives. A homogeneous sampling technique ensured that all participants shared the common characteristic of attending morning classes, facilitating a focused examination of their experiences (Etikan et al., 2016). In-depth interviews were conducted at convenient times, with participants informed of their rights, including the option to withdraw without consequences (Cohen et al., 2018). This approach ensured the collection of rich, relevant data reflective of the academic and personal challenges morning shift learners face.

2.4 Research Instrument

The study utilized an interview guide designed to align with the research objectives, focusing on the challenges morning shift students face, their time-management strategies, and academic engagement issues. The questions were tailored to the participants' context to ensure relevance and depth. A panel of experts reviewed and rated the interview guide, providing feedback that informed revisions and ensured the instrument's validity. This process aligns with Briggs et al. (2012) and Roulston (2010), who emphasize the importance of structured interview

guides in gathering focused, reliable data. Consistency and topic coverage, as highlighted by Creswell and Poth (2018), were maintained to enhance the quality of data collection.

2.5 Data Gathering Procedure

The researcher obtained consent from participants and their guardians, along with participant assent, ensuring ethical compliance in research involving minors (Cohen et al., 2018). Signed consent forms confirmed voluntary participation and approval for audio-recorded interviews. In-depth interviews were conducted to gather detailed insights into the experiences of morning shift students, focusing on their challenges, coping strategies, and academic engagement. Audio recordings ensured accurate documentation. Thematic analysis was applied to identify and present key themes, capturing the essence of participants’ experiences.

2.6 Data Analysis

The data collected from in-depth interviews were analyzed using thematic analysis, as Braun and Clarke (2006) outlined. The process involved transcription, coding, and categorization, guided by Creswell and Poth's (2018) framework. Participant responses were transcribed, translated, and reviewed to ensure alignment with the study's objectives. Confidentiality was maintained through data coding, which identified key concepts and recurring themes. Colaizzi’s method deepened the analysis, transforming significant statements into formulated meanings and constructing a thematic framework. These steps provided a clear and organized understanding of participants’ experiences.

2.7 Ethical Considerations

This study adhered to ethical research principles to safeguard participants' rights and well-being. Informed consent was obtained, ensuring participants and their guardians were briefed on the study’s purpose, voluntary nature, and withdrawal rights. Confidentiality was maintained by anonymizing data and securely handling recordings in compliance with the Data Privacy Act of 2012. Risks, such as emotional discomfort, were minimized through sensitive interviewing and debriefing. Participants were selected equitably, and tokens of appreciation were provided as a gesture of gratitude. These measures upheld transparency, respect, and accountability, ensuring the research's integrity and social value.

3.0 Results and Discussion

3.1 Challenges Faced By Morning Shift Students

Table 1 presents morning shift students' challenges, categorized under two major themes: disruption of sleep patterns and energy levels and the impact of early class schedules on productivity, social life, and cognitive performance.

Table 1. Challenges faced by morning shift students	
Major Theme	Sub-theme
Disruption of Sleep Patterns and Energy Levels	Disruption of Sleep-Wake Cycle
	Morning Grogginess
	Challenges with Adjusting Sleep Routines
Impact of early class schedules on productivity, social life, and cognitive performance.	Cognitive Performance Variability
	Post-Morning Energy Slumps
	Social Isolation

Disruption of Sleep Patterns and Energy Levels

Morning shift students face significant disruption to their sleep patterns and energy levels, as reflected in the subthemes of sleep-wake cycle disruption, morning grogginess, and challenges with adjusting sleep routines. The misalignment of early class schedules with students' natural circadian rhythms makes it difficult for them to maintain energy levels throughout the day. As one student shared,

"I try to wake up earlier, but my body does not adjust. I am always tired and struggling to focus in class."

Despite efforts to wake up earlier, many students experience morning grogginess, significantly impairing their ability to stay alert and concentrate in class. One participant explained,

"Even if I wake up an hour earlier, I still feel sleepy, and it is hard to concentrate in the first few classes."

Furthermore, students often face challenges in adjusting their sleep routines, as the temptation to stay up late, either due to academic work or personal habits, conflicts with the need to wake up early, leading to sleep deprivation. A student noted,

"I know I should sleep early, but I always stay up late doing schoolwork, and then I am exhausted in the morning."

Impact of Early Class Schedules on Productivity, Social Life, and Cognitive Performance

The impact of early class schedules extends beyond energy levels to affect productivity, cognitive performance, and social life. The subthemes of cognitive performance variability, post-morning energy slumps, and social isolation illustrate these challenges. Many students report cognitive performance variability, with their minds typically clearer later in the day than in the morning. One participant shared,

"I feel like I can think more clearly after lunch, but in the morning, my brain is still foggy."

This misalignment with peak cognitive function hampers their ability to focus and perform well in early classes. Post-morning energy slumps are also frequent, as students experience significant fatigue after their morning classes, impacting their ability to remain productive. As one student described,

"By the time my last class rolls around, I am completely drained and have trouble paying attention."

Additionally, early class schedules interfere with students' social lives, as they must go to bed earlier to wake up for morning classes, leaving them out of sync with their peers' social activities. One participant noted,

"It is tough because my friends stay up late, but I must go to bed early for my morning classes. It feels like I miss out on a lot."

3.2 Effective Strategies Students Employ to Manage Time and Energy for Early Class Schedules

The findings in Table 2 highlight several major themes related to effective strategies that students employ to manage their time and energy for early class schedules.

Table 2. *Specific strategies or techniques employed by the morning shift students to manage their time and energy effectively*

Major Theme	Sub-theme
Establishing a Healthy Evening Routine	Wind-Down Time Avoiding Stimulating Activities Streamlined Nightly Schedule
Optimizing Morning Preparations	Efficient Routines Energizing Activities Hydration and Nutrition
Enhancing Focus and Engagement in Classes	Active Note-Taking Techniques Movement Breaks Mindfulness Practices

Establishing a Healthy Evening Routine

One significant strategy students use to manage their time and energy for early class schedules is establishing a healthy evening routine, which includes subthemes such as wind-down time, avoiding stimulating activities, and a streamlined nightly schedule. Students allocate specific time to relax and prepare for sleep, signaling their bodies that it is time to rest. One student shared,

"I turn off all screens an hour before bed and read a book instead. It helps one unwind."

This routine is crucial for improving sleep quality and preparing students for the next day's challenges. Students consciously avoid stimulating activities before bedtime, such as using electronic devices or engaging in intense discussions. One participant noted,

"I try not to scroll through social media before bed because scrolling through social media before bed keeps one's mind racing."

Avoiding these distractions promotes better sleep hygiene and helps students feel refreshed. Furthermore, students follow a streamlined nightly schedule, planning tasks for the following day to reduce stress and avoid morning chaos. A student shared,

"I write down everything I need to do at night so I can just follow my list in the morning."

This structured approach reduces decision fatigue and enhances morning efficiency. These findings suggest that establishing a healthy evening routine is essential for improving sleep and readiness for early classes.

Optimizing Morning Preparations

Another key strategy is optimizing morning preparations, which includes subthemes such as efficient routines, energizing activities, and hydration and nutrition. Students implement efficient routines to streamline their morning activities, such as laying out clothes and preparing breakfast the night before. One student explained,

"I always lay out my clothes the night before so I can just get dressed quickly in the morning."

These routines help reduce morning chaos and ensure punctuality for early classes. Additionally, students engage in energizing activities, such as quick workouts or listening to upbeat music, to boost their energy levels. One participant stated,

"I do a quick workout or listen to my favorite podcast while getting ready; it wakes me up!"

Engaging in such activities helps combat morning grogginess and improves alertness for classes. Moreover, students prioritize hydration and nutrition, starting their day with a glass of water and a nutrient-rich breakfast to maintain energy levels throughout the morning. A student remarked,

"I always drink a glass of water first thing in the morning; it helps me feel more awake."

Proper hydration and nutrition are key for cognitive function and sustained energy. These findings suggest that optimizing morning preparations through efficient routines and energizing practices is vital for students to start their day positively and effectively manage their time during busy mornings (Yim, 2024).

Enhancing Focus and Engagement in Classes

The third major theme involves enhancing focus and class engagement, with subthemes like active note-taking techniques, movement breaks, and mindfulness practices. To improve engagement and understanding, students employ active note-taking methods such as summarization, questioning, and using visual aids during lectures. One student noted,

"I take notes in my own words and draw diagrams; it helps me remember better."

These techniques help students stay engaged and improve retention of material. In addition, students integrate short physical activities, like stretching or walking, into their study sessions to maintain focus and energy. A participant explained,

"I take a five-minute break every hour to stretch; it refreshes me."

These movement breaks help counteract fatigue and enhance concentration during long periods of study or class. Finally, incorporating mindfulness exercises, such as meditation or breathing techniques, into their routines helps students clear their minds and reduce anxiety. One student shared,

"I spend a few minutes meditating each morning; it helps clear my mind for class."

These mindfulness practices improve focus, reduce anxiety, and create a more conducive learning environment for students with early class schedules (Renzulli et al., 2015).

3.3 Challenges Associated with Morning Classes Impacting Academic Performance and Engagement in Coursework

Table 3 presents the findings highlighting several major themes related to the challenges associated with morning classes that impact students' academic performance and engagement in their coursework.

Table 3. *Challenges associated with morning classes that impact students' academic performance and engagement in their coursework*

Major Theme	Sub-theme
Challenges of Early Class Schedules	Cognitive Peak and Engagement Time Management Struggles Social Adjustments
Impact of Home Responsibilities	Disruption of Morning Routines Sleep Quality Challenges
Strategies for Improvement	Prioritizing Sleep Quality Time-Blocking Techniques Active Learning Techniques

Challenges of Early Class Schedules

A significant theme emerging from the findings is the challenges of early class schedules, which include subthemes such as cognitive peak and engagement, time management struggles, and social adjustments. Students frequently struggle to achieve peak cognitive performance early in the day, which affects their ability to absorb complex information during morning classes. One student explained,

"I find it hard to focus on lectures before I have had enough time to wake up."

This challenge can lead to decreased academic performance and lower engagement during key learning periods (Karp & McCarthy, 2016). Additionally, students experience difficulties with time management, as they must balance sleep needs with academic responsibilities. One participant noted,

"I often feel rushed in the mornings, trying to get everything done before class starts, which affects how prepared I feel."

These rushed mornings can negatively impact students' class preparedness, resulting in poorer academic outcomes (Macan et al., 2011). Furthermore, early classes require students to adjust their social activities, often leading to social fatigue. A student shared,

"I have to skip out on social events just to ensure I can wake up for my early classes; it makes me feel disconnected from my friends."

This adjustment can reduce motivation and engagement in morning classes due to feelings of isolation (Cokley & McClain, 2016). These findings indicate that the challenges associated with early class schedules are multifaceted and can significantly impact academic performance and student well-being.

Impact of Home Responsibilities

Another major theme that emerged is the impact of home responsibilities, which includes subthemes like disruption of morning routines and sleep quality challenges. Home responsibilities can interrupt students' morning routines, making it difficult for them to prepare adequately for their classes. One student shared,

"Between getting my siblings ready and dealing with family issues, I often run out of time to prepare for my classes."

These disruptions can reduce concentration and preparedness during morning lectures (Goff & Moller, 2020). Moreover, balancing school-related commitments with late-night responsibilities can hinder sleep quality, thus impacting engagement in morning classes. A participant noted,

"I often stay up late finishing assignments; by the morning, I am too tired to focus."

Poor sleep quality affects cognitive function and academic performance, highlighting the need for better management of home and academic responsibilities (Walker & McCarthy, 2019). These results suggest that home

responsibilities are critical in shaping students' readiness for early classes, and routine disruptions can directly impact their academic success.

Strategies for Improvement

The third major theme is strategies for improvement, with subthemes such as prioritizing sleep quality, time-blocking techniques, and active learning techniques. Students who prioritize maintaining consistent sleep patterns report feeling more alert and ready for early morning classes. One student shared,

"I have started going to bed at the same time every night; it has made a huge difference in how alert I feel in the morning."

Prioritizing sleep helps enhance cognitive function and overall performance in academic activities (Lo et al., 2016). Additionally, students employ time-blocking strategies, allocating specific time slots for various activities, which helps promote a balanced and well-managed schedule. A participant noted,

"Using a planner has helped me manage my time better; I know exactly when to study or do chores."

Time management strategies can improve academic performance by ensuring students are adequately prepared for their classes (Britton & Tesser, 1991). Lastly, incorporating active learning techniques such as class discussions and mnemonic devices fosters interactivity and enjoyment in morning lectures. A student remarked,

"Engaging more in class discussions has made me look forward to my morning lectures instead of dreading them."

Active learning strategies enhance student engagement and improve academic performance (Prince, 2004). These findings suggest that adopting strategies such as improving sleep quality, managing time effectively, and using active learning techniques can help students navigate early class schedules.

4.0 Conclusion

The findings clearly illustrate the significant challenges morning shift students face, primarily stemming from the disruption of their natural sleep patterns and energy levels. The misalignment between early class schedules and students' circadian rhythms leads to difficulties maintaining adequate energy throughout the day, resulting in persistent morning grogginess and difficulty focusing during lectures. Additionally, the conflict between the need to wake up early and the inclination to stay up late for academic work creates a cycle of sleep deprivation that further hampers students' ability to perform optimally. Furthermore, early class schedules contribute to cognitive performance variability, as many students find their mental acuity peaks later in the day, leaving them feeling foggy and disengaged during morning sessions. This situation is compounded by post-morning energy slumps that diminish productivity and affect overall academic engagement. Lastly, the necessity of adhering to an early schedule often isolates students socially, as they miss out on late-night activities with peers, leading to feelings of disconnection. These challenges highlight the pressing need for strategies that can better support morning shift students in managing their academic responsibilities while prioritizing their health and well-being.

The findings reveal effective strategies students use to manage their time and energy for early class schedules, emphasizing the importance of structured routines for academic success. The first major theme, Establishing a Healthy Evening Routine, highlights the value of a wind-down period before sleep. By avoiding stimulating activities and following a streamlined nightly schedule, students can improve sleep quality and reduce decision fatigue, preparing them for early morning challenges. Optimizing Morning Preparations' second major theme demonstrates how efficient routines can ease the chaos of busy mornings. Preparing clothes and breakfast in advance, engaging in energizing activities, and prioritizing hydration help combat morning grogginess and enhance class alertness. These practices improve cognitive function and sustained energy levels throughout the day. Finally, the third major theme, Enhancing Focus and Engagement in Classes, underscores the role of active learning strategies in fostering academic engagement. Techniques such as active notetaking, movement breaks, and mindfulness enhance concentration and retention during lectures. Overall, these findings suggest that structured evening routines, proactive morning preparations, and active learning techniques can significantly improve students' academic performance and well-being in early morning classes.

The findings highlight students' significant challenges with morning classes, emphasizing their impact on academic performance and engagement. The first major theme, Challenges of Early Class Schedules, reveals that students struggle to achieve peak cognitive performance in the morning, which hampers their ability to absorb complex information. This misalignment with natural cognitive rhythms can lead to decreased academic performance and lower engagement. Additionally, time management becomes a struggle as students balance sleep needs with academic responsibilities, often resulting in rushed mornings that negatively affect preparedness. The second major theme, the Impact of Home Responsibilities, underscores how familial obligations disrupt morning routines and hinder adequate preparation for classes. These disruptions contribute to poor sleep quality, impacting cognitive function and academic performance. The third major theme, Strategies for Improvement, offers insights into enhancing academic experiences despite these challenges. Prioritizing sleep quality, implementing time-blocking techniques, and engaging in active learning strategies can improve alertness and performance in early morning classes while fostering better time management and engagement.

5.0 Contributions of Authors

The collaborative efforts throughout the research process were essential to the study's success. While the author took the lead in the conception, design, data collection, and analysis, many aspects of the research involved shared responsibilities. Collaborative writing was pivotal in the manuscript, with co-authors contributing to various sections. For example, the development of the literature review was a joint effort, drawing on the diverse expertise of colleagues who provided valuable insights and perspectives.

Moreover, the research process involved multiple revisions, with co-authors and peers offering constructive feedback to enhance the manuscript. These revisions focused on improving the text's clarity, coherence, and overall flow. The author worked closely with collaborators to incorporate their suggestions, ensuring that the final manuscript met high standards of accuracy and readability. This collective effort in writing, revising, and refining strengthened the study, producing a comprehensive and high-quality manuscript that adhered to established research standards.

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The authors declare no conflicts of interest about the publication of this paper.

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Home as a Workplace: Demographic Profiles and their Implications to Work-Family Conflict

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Abstract. The COVID-19 pandemic profoundly affected businesses, organizations, and educational institutions. Private school employees were compelled to telecommute due to quarantine restrictions, increasing the risk of work-family conflict. This study investigates if demographic variables impact work-to-family and family-to-work conflict levels and explores common challenges telecommuting employees face. The study is under the comparative study design. T-test and frequency distribution were utilized as statistical treatment. The results also indicated significant differences in the levels of family-to-work conflict ($p=0.001$) between males and females, as well as in work-to-family conflict ($p=0.000$) and family-to-work conflict ($p=0.005$) levels between managerial and non-managerial employees. The study also found common challenges employees encounter when working from home, including difficulty maintaining and managing productivity, lack of physical interactions and socialization with co-workers, feelings of loneliness and isolation, and difficulty in getting and staying organized. The research contributes theoretically by examining the concept of work-family conflict, specifically in telecommuting during the COVID-19 pandemic. It builds upon existing theories, such as role theory, to explore how conflicting demands from work and family spheres affect employees working from home. The findings offer valuable insights into human resource management practices. The study suggests that organizations should consider implementing family-friendly HR practices, training and development initiatives, and other programs tailored to address telecommuting challenges and work-family conflict.

Keywords: Family-to-work conflict; Telecommuting; Work-family conflict; Work-to-family conflict.

1.0 Introduction

Even before the pandemic, telecommuting had already become an increasingly prevalent work method, attracting significant interest from researchers and scholars. Studies in telecommuting have spanned various fields, including human resources management, industrial-organizational psychology, organizational communications, leadership studies, information technology, and ergonomics. This broad focus highlights telecommuting's versatility and growing importance in modern workplaces. As a result, interest in telecommuting and other flexible working arrangements intensified in the 21st century, with many companies adopting telecommuting to facilitate global virtual teams, enhance employee productivity and efficiency, reduce commuting time, and promote better work-life balance.

The COVID-19 pandemic accelerated this trend dramatically. The World Health Organization (WHO) declared a global pandemic on March 12, 2020, COVID-19 caused profound health and economic disruptions worldwide. In response, the Philippine government implemented an Enhanced Community Quarantine (ECQ) starting on March

16, 2020, which was later extended and supplemented by other community quarantine measures. While necessary to curb the virus, these policies significantly impacted the workforce, compelling employers and employees to adopt alternative work arrangements such as telecommuting. Data from the Global Talent Survey (2020) illustrates this shift: Before the pandemic, only 31% of the global workforce worked remotely, compared to 51% during the pandemic's onset. In the Philippines, pre-pandemic telecommuting rates were even lower, with only 16% of the workforce working remotely. However, this figure rose to 42% in 2020, overtaking the 32% of employees who continued to work on-site. Notably, remote work was more prevalent in digital and knowledge-based industries (70%) than in professions requiring physical presence, such as manufacturing or healthcare (34%).

In light of these developments, the Philippine Department of Labor and Employment issued Labor Advisory No. 9, Series of 2020, to provide guidelines for implementing flexible work arrangements. This advisory aimed to help employers and employees navigate the challenges posed by the pandemic, offering telecommuting as a viable solution to maintain productivity and safety. While telecommuting was initially perceived as a solution to work-family conflicts, allowing employees to manage both domains more effectively, the reality has proven more complex. Telecommuting blurs the boundaries between work and family roles, creating potential conflicts. Work-family conflict, as conceptualized by Kahn et al. (1964) through role theory, arises when the demands of work and family roles clash. Researchers such as Carlson et al. (2000) and Netemeyer, Boles, and McMurrian (1996) distinguish between work-to-family conflict (WFC) and family-to-work conflict (FWC). WFC occurs when work obligations hinder family responsibilities, while FWC emerges when family demands interfere with work performance.

Interestingly, while telecommuting facilitates greater family involvement, this often comes at the expense of work productivity. For instance, Mukanzi and Senaji (2017) highlight that WFC frequently manifests when employees struggle to balance professional tasks with family obligations. Conversely, Weer & Greenhaus (2014) note that FWC occurs when family pressures undermine work efficiency. Thus, telecommuting presents both opportunities and challenges, reshaping the work-family dynamic. The challenges of telecommuting extend to the education sector, where the pandemic disrupted traditional teaching methods, affecting over 1.6 billion students and teachers globally (Pokhrel & Chhetri, 2021). Teachers required to telecommute faced heightened work-family conflicts, juggling professional responsibilities with family obligations within the same space. This imbalance could significantly impact teachers' performance and psychological health, ultimately affecting their students (König, Jäger-Biela, & Glutsch, 2020). Given the critical role of teachers in societal progress, understanding and addressing their work-family conflicts is essential.

This study aims to contribute to the growing body of research on telecommuting by exploring the overlapping responsibilities of work and family during the pandemic. Focusing on employees in private academic institutions, the study examines the demographic factors influencing work-to-family and family-to-work conflicts and identifies common challenges telecommuters face. The findings can inform human resources and organizational strategies to support employees in navigating these conflicts effectively.

2.0 Methodology

2.1 Research Design

This research utilized a comparative study design. It is deemed the most appropriate method for identifying the significant differences between the different demographic groups' family-to-work and work-to-family levels. A significant difference would also mean there is a measurable difference between the groups.

2.2 Research Locale

The study was conducted in private educational institutions in Tarlac City that enabled telecommuting for their teaching and non-teaching personnel.

2.3 Research Participants

The study involved 96 respondents. The researcher employed the complete enumeration method to gather data from all the respondents.

2.4 Research Instrument

The researcher employed the Work-Family Conflict Scale (WFCS) developed by Carlson, Kacmar, and Williams (2000). This scale is widely regarded as one of the most reliable tools for evaluating the multifaceted concept of work-family conflict. Additionally, the researcher designed a customized questionnaire to address the specific issues faced by employees working from home, which was included in the survey instrument's final section.

According to the initial validation conducted by Carlson et al. (2000), the reliability of the WFCS surpassed the standard acceptance threshold of 0.70. Specifically, Cronbach's alpha values were reported as follows: time-based WIF (0.87), time-based FIW (0.79), strain-based WIF (0.85), strain-based FIW (0.87), behavior-based WIF (0.78), and behavior-based FIW (0.85). The subsequent validation performed by Vieira et al. (2013) further reinforced the scale's structure through first- and second-order confirmatory factor analyses. Their findings highlighted the scale's robust discriminant validity, convergent validity, and internal consistency across its subscales.

2.5 Data Gathering Procedure

In order to collect relevant data from the respondents, the researcher sought permission from the Principal, Administrator, and the Rector of the respondent school to conduct a study on the school's employees. The researcher utilized Google Forms, where every item was encoded. It is an efficient tool because the data were tabulated after each respondent answered the form. Then, the questionnaires were distributed through email communications.

2.6 Ethical Considerations

The researcher asked for the respondents' consent to participate in the study. Should they wish not to participate or withdraw from participation, the researcher accepted their decision. Moreover, the researcher secured the anonymity and confidentiality of their responses, and the results will only be used for academic purposes.

3.0 Results and Discussion

Demographic profiles are the classifiable characteristics of the respondents. Table 1 depicts the demographic profiles of the respondents described in terms of gender, civil status, and work positions. The table shows that 38.54% or 37 respondents were female. On the other hand, 61.46% or 59 of the respondents were male. Regarding civil status, the survey respondents were 68.75% or 66 single individuals and 31.25% or 30 married individuals. Lastly, 36, or 30.77% of the respondents hold managerial or executive positions and designations, while 81, or 69.23%, have no executive or managerial functions; thus, they are considered non-managerial employees.

Table 1. Demographic profile of the respondents

Demographic Profile Variables		Frequency	Percentage (%)
Sex	Male	37	38.54
	Female	59	61.46
Civil Status	Single	66	68.75
	Married	30	31.25
Work Position	Managerial	31	32.29
	Non-Managerial	65	67.71

As shown in Table 2, regarding the FWC levels, female respondents reported higher levels, with a greater mean than males, who had a lower mean level. Female employees tend to prioritize family responsibilities over work roles, as they perceive their primary responsibility as caring for their family members. Their "mother" or "sister" roles are more salient and central in their personal and professional domains. The difference in FWC levels between females and males is statistically significant. Moreover, the data indicate a p-value of 0.01 for comparing males' and females' FWC levels, which is lower than the 0.05 significance threshold, confirming a significant difference between the two groups. This finding aligns with previous research, including studies by McElwain, Korabik, & Rosin (2005), Eagly & Wood (2012), Lyu & Fan (2020), Shockley et al. (2017), and Ng et al. (2009), which concluded that females are more likely to experience higher and significant levels of family-to-work conflict.

Table 2. *Test of difference: WFC and FWC based on sex*

Variable	P-value	Interpretation
Work-to-Family Conflict (WFC)	p = 0.208	Not significant
Family-to-Work Conflict (FWC)	p = <.05	Significant

Although the results show that males reported higher work-to-family conflict (WFC) levels, the difference is not statistically significant. Specifically, the data show a two-tailed p-value of 0.208 for the WFC levels of male and female respondents, indicating no statistical difference between the two demographic groups. This result is consistent with findings from studies by Ahmad (2008) and Ugwu, Amazue, and Onyedire (2014), which provide empirical evidence that gender is not a strong determinant of differences in work-to-family conflict levels.

Table 3 presents the significant differences between single and married respondents' WFC and FWC levels. The data reveal that single respondents experienced higher WFC levels than their married counterparts. This may be attributed to the notion that single individuals are often more eager to work overtime to build their careers and demonstrate high performance. As a result, they tend to sacrifice time for their families to meet or exceed work expectations and responsibilities. These findings are consistent with the study by Kim et al. (2019), which demonstrated that longer working hours, often leading to work-to-family conflicts, are more prevalent among single individuals.

Table 3. *Test of difference: WFC and FWC based on civil status*

Variable	P-value	Interpretation
Work-to-Family Conflict (WFC)	p = 0.31	Not significant
Family-to-Work Conflict (FWC)	p = 0.51	Not Significant

Regarding FWC levels, married respondents exhibited higher mean levels than single respondents. Married individuals tend to experience greater family-to-work conflict, likely due to the added family responsibilities and expectations from their spouse, children, and other family members, which may spill over into their work domain. This aligns with Mjoli et al. (2013), who noted that family-to-work conflict increases as family obligations expand through marriage. Regarding statistical significance, the table shows a two-tailed p-value of 0.31 for the WFC levels of single and married respondents, indicating no statistically significant difference between the two groups. Similarly, the data indicate a p-value of 0.51 for the FWC levels of single and married respondents, which is higher than the 0.05 significance threshold, confirming a non-significant difference.

The marital status differences in WFC and FWC are surprisingly non-significant. Additionally, much of the previous literature on this topic has been inconsistent. Several studies (e.g., Nomaguchi, 2014; Noor, 2014; Beauregard, 2006) used participants from the general population without adequately matching them on key professional and personal variables, which may have contributed to non-significant findings. According to Oscharoff (2011), marital status alone (being single or married) is not a strong predictor of significant differences in WFC or FWC levels. It is possible that systematic differences, such as industry type and position level, have influenced prior findings. Future research should conduct an in-depth analysis of factors such as spousal support, marital satisfaction, and the number of children's marital status (Oscharoff, 2011).

As shown in Table 4, regarding the work-to-family conflict (WFC) levels, the data show that employees in managerial positions or designations exhibit higher mean levels. This can be attributed to the additional work pressures, expectations, and commitments associated with managerial roles, such as Principals, Assistant Principals, Non-teaching Supervisors, Academic Supervisors, and Subject Area Heads. Managerial positions often require working beyond the standard hours, which spills over into the domestic domain, adversely impacting family life (Quick et al., 2004; Chawla & Sondhi, 2011). Furthermore, managerial employees who receive designation fees or honoraria may feel compelled to meet the heightened expectations of their roles and deliver high-quality output or performance, often resulting in overtime work that affects their family responsibilities.

Table 4. *Test of difference: WFC and FWC Based on work position*

Variable	P-value	Interpretation
Work-to-Family Conflict (WFC)	p < 0.05	Significant
Family-to-Work Conflict (FWC)	p < 0.05	Significant

Conversely, non-managerial employees, such as subject teachers and rank-and-file office staff, report higher levels of family-to-work conflict (FWC). This could be explained by their comparatively lighter workload, which makes them more likely to accommodate demands or requests from their family members. As a result, these demands interfere with their work responsibilities. A confirmatory interview further supported this finding, indicating that employees with lighter workloads are more prone to such experiences (Huang, 2004).

The t-test results reveal that the difference in WFC levels between managerial and non-managerial employees is statistically significant. This finding aligns with previous studies (Carnicer et al., 2004; Duxbury & Higgins, 2003) that highlight the broader and more complex scope of managerial work compared to non-managerial roles. Managerial employees shoulder significant responsibilities, including technical and organizational decision-making for the school. Consequently, they demonstrate a greater commitment to time and physical presence at organizational activities, leaving them with fewer hours for personal and family life. This leads to a higher degree of conflict between work and family roles for managers than non-managers (Beauregard, 2006; Nielson et al., 2001; Kelly et al., 2011). Similarly, the difference in FWC levels between managerial and non-managerial employees is also statistically significant. This significant difference can be attributed to the nature of non-managerial jobs, which typically involve lighter workloads and more schedule flexibility. This flexibility allows non-managerial employees to accommodate family demands, thereby increasing their experience of family-to-work conflict.

Table 5. *Common problems/challenges experienced by employees during WFH*

Problems	Frequency	Rank
Difficulty in maintaining and managing my productivity.	86	1
Lack of physical interactions and socialization with my co-workers.	79	2
The feeling of loneliness and isolation	79	3
Difficulty in getting and staying organized	76	4
Lack of gap on communication with my co-workers	63	5
Lack of informal learning opportunities such as coaching, mentoring, or job shadowing	55	6
Tendency to go to work even when ill	51	7
Frequent experience of stress and burnout	46	8
Lack of supervision and support from my supervisors	40	9
Lack of emotional support from my co-workers and supervisors	40	9
Slow or intermittent internet connection	27	10
Decreased feeling of being recognized in work	24	11
Lack of quiet and comfortable working environment	20	12

First on the list is the difficulty in maintaining and managing productivity. While some studies suggest remote workers are more productive, this is not true for every telecommuter. According to some employees working from home, they are prone to engaging in counterproductive activities. Specifically, they are frequently distracted by tasks such as surfing social media, watching YouTube videos, browsing the internet, or even napping during working hours, facilitated by the easy accessibility of technology. As a result, employee productivity levels may decline, and backlogs may become unmanageable.

Ranked second is the lack of physical interaction and socialization with co-workers, closely tied to feelings of loneliness and isolation. These two issues are inherently interconnected. Due to lockdowns and the implementation of telecommuting, employees are confined to their homes, cutting off informal interactions and personal communications with colleagues. In the remote work model, employees accustomed to working in office or group settings may feel lonely and isolated. They may become emotionally detached from their organization and co-workers if they perceive a lack of connection with peers. For instance, one of the main advantages of working in a school setting is the social engagement with co-teachers and students. While employers aim to prevent excessive socializing from impacting productivity, it is evident that daily interpersonal interactions positively influence workers' mental health and morale.

The physical separation of the workforce and the reliance on communication technologies such as Google Hangouts, Google Meet, and learning management systems can also create challenges in communication and collaboration. Telecommuting eliminates in-person communication, which is not easily replaced by video or voice calls. Consequently, miscommunication or misunderstandings can become common issues. Additionally, employees miss out on spontaneous encounters, often leading to innovative ideas. Informal learning opportunities

are another aspect employees miss in this work modality. In face-to-face settings, coaching, mentoring, and job shadowing are more accessible because supervisors and managers are physically present. With telecommuting, however, employees may hesitate to seek these interventions, assuming that their supervisors and managers are also preoccupied with responsibilities at home and work. Other relevant problems that employees encounter when working from home are the following: the tendency to go to work even when ill, frequent experience of stress and burnout, lack of supervision and support from supervisors, lack of emotional support from co-workers and supervisors, decreased feeling of being recognized in work, slow or intermittent internet connection, and lack of quiet and comfortable working environment.

4.0 Conclusion

The significant difference between the FWC levels of females and males can be attributed to the fact that females are more likely to experience higher and more pronounced family-to-work conflict due to traditional role orientations. Conversely, marital status alone is a poor predictor of either direction of work-family conflict. Additionally, the data revealed that the differences in WFC and FWC levels between managerial and non-managerial employees are statistically significant. This can be explained by the varying levels of work pressure, demands, and schedule flexibility associated with different job positions. Due to the nature of telecommuting as a work setup, the challenges encountered by employees working from home are primarily rooted in the lack of physical interaction with co-workers and supervisors. While this work arrangement has advantages and disadvantages, it became evident that employees and organizations were not fully prepared to adopt telecommuting as an alternative to on-site work. Proper communication protocols, comprehensive training, and organizational support are critical to minimizing the negative impacts of telecommuting and maximizing its potential benefits. Based on these findings, the researcher recommends that companies ensure the implementation of effective and comprehensive family-friendly HR policies and programs, encourage employees and supervisors to refrain from sending work-related communications outside working hours, and task HR and department managers with reviewing the distribution of responsibilities and workloads to ensure employees have realistic work expectations. Lastly, companies should conduct regular evaluations of the effectiveness of telecommuting for those who choose to implement it as part of their work modality.

Future research endeavors can address the limitations of this study and broaden its scope. Replicating this study in various industries beyond the private education sector is strongly encouraged. Additionally, comparing and contrasting findings obtained through the same instruments across different provinces or global regions would provide valuable insights. Further studies should also explore the underlying or moderating factors influencing or predicting work-family conflict among telecommuters. Specifically, researchers should consider demographic variables such as age, marital status, household size, income, and job-related factors like organizational support, autonomy, work schedules, and job flexibility.

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9.0 Reference

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Bridging the Financial Gap: A Financial Literacy Model for Geriatrics in Negros Oriental

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Abstract. This study aimed to explore the perceptions of geriatrics in Negros Oriental regarding the importance of retirement preparedness practices and financial literacy. Specifically, it sought to develop a financial literacy model tailored to the needs of individuals preparing for retirement, focusing on investment, emergency funds, debt management, income protection, healthcare, and the overall significance of financial literacy. A descriptive quantitative research design was employed, utilizing a survey questionnaire to collect data. The findings revealed a significant relationship between respondents' profiles and retirement preparedness ($r = 0.806$, $p = 0.034$, at 0.05 significance level), leading to the rejection of the null hypothesis. Conversely, the relationship between financial practices and retirement preparedness ($r = 0.594$, $p = 0.291$, at 0.05 significance level) was insignificant, failing to reject the null hypothesis. The study underscores the importance of strengthening financial literacy and education campaigns to equip individuals with the knowledge and skills necessary for effective retirement planning.

Keywords: Financial literacy; Financial planning; Geriatrics; Investment; Retirement preparedness

1.0 Introduction

Life for most of us is full of challenges; for many, money or personal finance is very challenging. There are no shortcuts to achieving a stable financial future. It must begin with understanding the financial concepts that will help make decisions. An essential indicator of people's ability to make financial decisions is their level of financial literacy (Lusardi, 2019). Financial literacy is not only the knowledge and understanding of financial concepts and risks but also the skills, motivation, and confidence to apply such knowledge and understanding to make effective decisions across a range of financial contexts to improve the financial well-being of individuals and society, and to enable participation in economic life. Thus, financial literacy refers to knowledge and financial behavior (OECD).

Financial planning and retirement planning are two separate entities, but they must go hand in hand to provide the lifestyle you want during retirement (Duckworth, 2019). A financial plan is a comprehensive document that includes details about your cash flow, savings, debts, investments, insurance, and other elements of your financial life. A good financial plan takes the stress of setting and prioritizing goals and maps out clear strategies for achieving them (Voigt & Yochim, 2020). Understanding these concepts, how they work together, and their impact is vital in laying the groundwork for financial security.

While several studies have explored the importance of financial literacy and retirement preparedness, much of the existing literature focuses on younger individuals or working adults in urban settings. There is a lack of research specifically addressing the unique challenges, perceptions, and needs of geriatrics in rural or provincial areas, such as Negros Oriental, Philippines. Furthermore, existing studies rarely integrate the development of a tailored financial literacy model that accounts for local cultural, economic, and social contexts. This gap highlights the need for a comprehensive understanding of geriatrics' perceptions of retirement preparedness and financial literacy and for developing a practical, culturally sensitive model to address their specific needs and promote long-term financial security. Your study aims to fill this gap by focusing on geriatrics in a provincial context and designing a model suited to their unique circumstances.

2.0 Methodology

2.1 Research Design

The study utilized a descriptive-correlational research design to effectively present and analyze the facts as they existed at the time of the study. The descriptive method was chosen because it provides a systematic approach to understanding and documenting existing conditions. According to Penwarden (2014), descriptive research is conclusive, setting it apart from exploratory methods. Penwarden also highlighted that descriptive research collects quantifiable data, which allows for statistical analysis and inferences about the target population through thorough data examination.

2.2 Research Locale

The study was conducted in Negros Oriental, a province in Central Visayas, Philippines. The pre-test was carried out in Bayawan City. At the same time, the actual data collection took place in several municipalities, including Dauin, Bacong, Valencia, and Sibulan, as well as in various barangays within Dumaguete City, the capital of Negros Oriental. Additionally, some respondents were from other parts of the province, such as Bais City, Tanjay City, and Ayungon, ensuring a broader representation of the target population.

2.3 Research Respondents

The primary respondents of this study were geriatrics in Negros Oriental, aged 60 to 75 years, encompassing both male and female participants. Data collection was conducted from the first week of January to the first week of February 2020. The respondents represented diverse backgrounds, including both professionals and non-professionals. Due to the specific characteristics of the geriatric population, participation was limited to individuals who were personally approached by the researcher and willingly consented after the study's objectives were thoroughly explained to them.

2.4 Research Instruments

The researcher used a self-administered questionnaire as the primary data collection tool to gather data for this study. This method was chosen for its cost-effectiveness, ease of analysis, and familiarity to most respondents. The questionnaire was reviewed and approved by the research adviser, statistician, and members of the defense panel. It was divided into three sections: the demographic profile of the respondents, their perceived level of importance of various factors, and their level of financial literacy. A 5-point Likert scale was used to analyze responses to Problem Statement 4. Respondents were also asked to provide reasons for their answers regarding retirement preparedness practices to ensure a deeper understanding and validate the data. For better comprehension, the questionnaire was translated into the Visayan language. The tool's reliability was assessed during the pretest, achieving a Cronbach's Alpha of 0.800, indicating a moderately acceptable level of reliability.

2.5 Data Gathering Procedure

The researcher sought guidance from the Chairman of the Graduate Program in Business Administration, who also serves as the Vice President for Academic Affairs of Saint Paul University Dumaguete, to discuss the proposed research problem. The research proposal was presented to the graduate defense panel after this consultation and received approval. A self-administered survey questionnaire was then prepared and reviewed by the panel for approval. The researcher ensured that all information collected would remain confidential and used solely for analysis. After approval, the questionnaire was pretested with 10 geriatrics, and adjustments were made as necessary. The researcher then collected the actual data, personally interviewing respondents who consented to participate.

Follow-up interviews were conducted to gather more in-depth insights and validate the data. The researcher visited various locations frequented by senior citizens, including the Mother of Perpetual Help Church, Dumaguete Cathedral Church, Freedom Park, Rizal Park, Rizal Boulevard, McDonald's, Robinsons Place, banks, and barangays within the city. Engaging with senior citizens proved challenging, requiring patience and persistence to gain their attention and trust, as many were initially hesitant or in a hurry.

2.6 Data Analysis Procedure

The results of the statistical computations guided the researcher in the interpretation and analysis of the data. Various statistical tools were employed in the study to address specific research problems. Frequency and percentage distribution were used to analyze Problems One and Three, determining the proportional relationship between a subset of respondents and the entire population. Graphical presentations, including bar graphs and scatter plots, were also used for Problem Three to visually represent the data. Weighted Mean was applied to Problem Four to calculate the overall average of respondents' perceptions. For Problem Five, an independent sample t-test was conducted to identify any statistically significant differences between the means of two unrelated groups. Lastly, Pearson Product-Moment Correlation was used for Problem Six to measure the strength and direction of the association between two variables on an interval scale. These tools collectively enabled a comprehensive analysis of the data.

2.7 Ethical Considerations

The researcher diligently adhered to ethical standards throughout the study. Key principles such as transparency, informed consent, voluntary participation, confidentiality, and the well-being of participants were strictly observed. All ethical considerations and protocols were meticulously followed for the entire duration of the research. Confidentiality of all data, including the identities and ratings of support personnel, was rigorously maintained. Additionally, the researcher obtained ethical approval from the University Research Office's Ethical Committee.

3.0 Results and Discussion

3.1 Demographic Profile

The demographic profile of elderly respondents in the Philippines highlights significant trends in age, gender distribution, marital status, educational attainment, and income sources. According to Abalos (2020), older Filipinos often display lower educational attainment levels than the general population, though there has been gradual improvement. Interestingly, many of these individuals rely on pensions from the Social Security System (SSS) and the Government Service Insurance System (GSIS) as their primary sources of income, typically receiving monthly pensions of PHP 10,000 or less. Gender and marital status also play a role in shaping the experiences of the elderly. Palmes, Trajera, and Ching (2021) found that factors such as gender distribution and marital status influence resilience and social participation among senior citizens, with many of the elderly being married. Moreover, the Philippine Statistics Authority (2019) reported that two out of ten Filipinos aged 60 and over benefit from retirement pensions, with average monthly pensions amounting to PHP 5,123 for SSS members and PHP 18,525 for GSIS retirees. Collectively, these studies underscore the socioeconomic realities and demographic composition of the elderly in the Philippines, reflecting key characteristics such as age, income sources, and education that align closely with the findings in Table 1.

Table 1. *Description of the respondent's socio-demographic characteristics*

Variables	Frequency
Age	
60 - 64	19
65 - 69	20
70 - 75	24
Sex	
Male	30
Female	33
Civil Status	
Single	4
Married	38
Widow/widower	20
Separated	1
Educational attainment	

Elementary Level	9
Elementary Graduate	7
High School Level	5
High School Graduate	9
College Level	10
College Graduate	21
Master's Degree	3
Source of Income	
GSIS/SSS Pension	24
Small Business	9
Dependents	12
Wage/Salary	12
Farming	3
Senior Citizen Aid	3
Monthly Income	
10,000 and below	30
10,001 - 20,000	16
21,000 - 30,000	6
31,000 - 40,000	2
41,000 - 50,000	3
51,000 and above	6

3.2 Geriatrics Retirement Preparedness Practices

In this retirement preparedness practice, the respondents who answered yes chose the level of importance, while respondents who answered no stated their reasons for not making investments, having an emergency fund, how they manage their debt, and not availing of income protection and healthcare. Table 2 presents the perceived importance of the Geriatrics Retirement Preparedness on "investments." The highest, with a percentage of 38.10%, is "real estate," followed by "pension fund," with a percentage of 36.98%, 8, and "jewelry," with a percentage of 9.52. Other investments made by three ((3) respondents are in small businesses each, such as computer shops, swine (piggery) raising, and a tricycle operator, i.e., one (1) livelihood project with a percentage of 1.59 each, respectively. The result further shows that 26.98% of geriatric respondents are engaged in "pension funds," while 38.10% are involved in "real estate," which is quite a big majority of the respondents. The respondents claim that the pension funds they invested are the Social Security System among the private sector and the Government Security Insurance System among government employees. This pension plan is a defined contribution plan where the employee and employer contribute to the employee's retirement savings. On the other hand, "real estate" investment was mostly in land acquisition, wherein the respondents used to build their houses.

Table 2. *Perceived level of importance of the Geriatrics Retirement Preparedness on "investments"*

Investments	Yes (%)	Remarks	No (%)
Real Estate	38.1	Low Importance	61.9
Pension Fund	26.9	Low Importance	73.0
Jewelry	9.52	Very Low Importance	90.4
Computer Shop business	1.59	Very Low Importance	98.4
Piggery business	1.59	Very Low Importance	98.4
Tricycle operator	1.59	Very Low Importance	98.4
Legend (in percentage): 78.00 - 100.00 = Very High Importance, 52.00 - 77.00 = High Importance, 26.00 - 51.00 = Low Importance, 1.00 - 25.00 = Very Low Importance			

Ferrer (2018) found that respondents showed low participation in high-yield investment options such as Mutual Funds, Unit Investment Trust Funds (UITFs), and stocks. This was attributed to their limited awareness and understanding of these financial instruments, which hinders their ability to generate passive income, build wealth, and achieve financial security for a comfortable retirement. Reyes (2019) found that a great percentage of senior citizens (32.1%) lack access to any of the government's social protection programs. Particular focus should be given to females, given that they are significantly disadvantaged, particularly regarding access to retirement or old age pensions, compared to males. This is because of females' low labor participation rates since retirement pensions for GSIS and SSS require prior employment experience in the public and private sectors, respectively. Furthermore, Reyes concludes that social protection programs must be directed towards improving the access of sectors with lower access. The laws and programs currently in place to provide health and income protection to senior citizens and intended beneficiaries must be made aware of the existence or guidelines for accessing these programs. Promoting women's employment in the labor force may improve their access to these social protection

programs when they reach the age of 60 since contributory government pensions are only accessible to previously employed people.

Respondents who answered no did not select the level of importance; however, they gave their reasons for not having any investment. Most of the respondents in their younger but productive years were unable to invest in any of the financial products because they claimed that their income was just enough to cover their daily expenses. Their priorities were expenses intended for their children's education, food, and other basic needs. The respondents engaged in small businesses also claimed that their income was just enough for the business's capital and basic needs. Employees in the government and private sector invest only in pension funds. This is because it is mandatory during the productive employment years. Some respondents also invested in real property because they said it was necessary when building their house. However, few respondents invested in computer shops, swine-raising projects, and tricycle operators because they are using these as their other sources of income right now. Few respondents also invest in jewelry because this could provide them with a better opportunity to help them during unlikely events or emergencies.

Table 3 takes cognizance of the highest percentage, 46.03, which were respondents who claim that their savings are kept with the cooperative. Thus, these concerned respondents are members of cooperatives. The respondents who "invest in time deposits in banks" have a percentage of 33.33, i.e., of "low importance" for the respondents. Savings intended for medical bills or any allocation for medical needs have a percentage of 31.75. These respondents have realized that as geriatrics today, setting aside money for health concerns is of primordial importance. In another vein, less than one-third of respondents, or 26.98% of them, indicate that they save money intended for shelter repairs and upkeep or maintenance of vehicles. For "home savings," with a percentage of 6.35, a few respondents preferred to keep their money at home, maybe because they do not have any bank account or are non-members of any development cooperative.

Table 3. *Perceived level of importance of the Geriatrics Retirement Preparedness on "emergency fund"*

Investments	Yes (%)	Remarks	No (%)
Savings in cooperative	46.0	Low Importance	53.9
Time deposits in banks	33.3	Low Importance	66.6
Savings for medical needs	31.7	Low Importance	68.2
Savings for shelter and vehicle upkeep or maintenance.	26.9	Low Importance	73.0
Home Savings	6.35	Very Low Importance	93.6

An emergency fund is money set aside for unforeseen expenses. There is no fixed rule on how much it should be, but somehow, it should be able to cover your major expenses for three to six months. This pool of money can spell the difference between a small bump in your finances and a total wreckage on your monetary situation and probably your entire life. The survey conducted by the Federal Reserve in 2019 found that nearly four in ten Americans would not be able to pay an unexpected expense of just \$400 with cash or savings. More than 63% of African Americans and more than 69% of Latinos have not even designated one penny for retirement. Those two racial groups within the United States will form more than 50% of the population by 2050. Then, it will not be a brown or a black problem; it will be an American crisis.

The study's findings by Ferrer (2018) reveal that regular saving is not a habit for many public school teachers. For many, the underlying cause is not having enough excess money after expenses. The inability of the teachers to manage forced many of these teachers into a situation where they could hardly save money for the future. As to emergency fund respondents who answered no, they shared that most of them have no savings because they claimed that their income was just enough for their daily expenses and basic needs. Their priorities were their day-to-day needs and the education expenses of their children.

The analysis of Table 4 highlights the debt management practices of geriatrics in Negros Oriental, demonstrating a high level of financial prudence among the respondents. All five indicators of debt management were rated with a 100% scale of "very high importance." These indicators include "paying off debt with high interest," "spending based on needs," "settling debt early to avail rewards," "spending within a cash budget," and a "mindset that debt could be detrimental." Among these, the emphasis on a mindset shift regarding the detrimental effects of debt was

particularly notable. This indicator, also rated at 100%, implies that all respondents recognized the critical importance of viewing debt as a potential distraction rather than a solution.

Table 4. *Perceived level of importance of the Geriatrics Retirement Preparedness on “debt management”*

Investments	Yes (%)	Remarks	No (%)
Pay off debt with high interest	100.00	Very High Importance	0.00
Spending based on needs	100.00	Very High Importance	0.00
Settlement of debt ahead with rewards	100.00	Very High Importance	0.00
No debt, spending within cash budget	100.00	Very High Importance	0.00
A mindset that debt could be detrimental	100.00	Very High Importance	0.00
Full payment of debt on time	98.41	Very High Importance	1.59

Research underscores the importance of effective debt management, particularly among older adults, as a component of financial stability and independence. Lusardi and Mitchell (2011) emphasized that financial literacy significantly impacts individuals' ability to manage debt and avoid financial pitfalls, especially during retirement. Their findings align with the observed practices of the geriatrics in Negros Oriental, who exhibit strong financial literacy in managing their debts effectively. Additionally, Abalos (2018) reported that older Filipinos tend to adopt conservative financial behaviors, such as avoiding unnecessary debt and focusing on living within their means, due to concerns about the adequacy of retirement income. Similarly, Palmes, Trajera, and Ching (2021) highlighted that senior citizens' financial preparedness and prudent spending habits contribute to higher resilience and quality of life in retirement.

The data suggests that geriatrics in the region prioritize efficient debt management practices, as evidenced by their consistent responses. Many respondents admitted to being wary of incurring debt, particularly in the past, due to concerns about their ability to meet future financial obligations. This sentiment aligns with their belief that debt might hinder their financial stability, especially during retirement. Most reported living within their means and avoiding credit as a financial strategy, particularly in their old age. Furthermore, respondents exhibited strong retirement preparedness in terms of debt management practices. Most indicated that they avoided taking on debt during their productive years due to fears of being unable to repay it in retirement. This cautious approach underscores their commitment to maintaining financial independence and stability, particularly as they aged.

Table 5 Under the income protection practices, “Term Life Insurance” with a percentage of 26.98, “Universal Life Insurance” and “Final Expense Insurance” with a percentage of 3.17, Whole Life Insurance” and “Group Life Insurance” with a percentage of 1.59. 17 respondents have practiced “Term Life Insurance” because they claim they are members of a cooperative and can easily avail themselves of the said insurance once an emergency happens or when they pass away, their family can get the burial benefits.

Table 5. *Perceived level of importance of the Geriatrics Retirement Preparedness on “income protection”*

Investments	Yes (%)	Remarks	No (%)
Term Life Insurance	26.98	Low Importance	73.02
Universal Life Insurance	3.17	Very Low Importance	96.83
Final Expense Insurance	3.17	Very Low Importance	96.83
Whole Life Insurance	1.59	Very Low Importance	98.41
Group Life Insurance	1.59	Very Low Importance	98.41

A study by Canada Life Group Insurance (2017), which surveyed 1,010 full- and part-time employees in the UK, revealed that few individuals have a financial safety net for serious illnesses. Only 18% of respondents reported having critical illness or income protection insurance to support them in case of a health condition affecting their earning capacity. Alarming, 72% admitted they would struggle financially if their income decreased by £570 per month. When a household's primary income earner faces a serious illness, having an appropriate critical illness or income protection insurance policy can serve as a crucial financial safeguard, providing support during challenging times.

Another study by Zurich Insurance Group (2018), the global insurer, on ‘income protection gaps’ (IPGs) based on a survey of over 11,000 respondents in 11 countries, has found significant demand for income protection insurance.

More than half (52 percent) of respondents without insurance say they would be willing to buy it. Failure to protect income in the event of disability or illness poses a significant challenge, both in traditional and emerging economies. For families, the impact of illness or disability on income can be devastating. The need for such protection is rising. In the developed world, demand for government support – the traditional source of relief – is rapidly outpacing supply. At the same time, disability levels are rising due to an aging population, tighter labor markets, and improved medical diagnosis, which can confirm illnesses and disabilities.

Most respondents did not practice income protection during their productive years. They claimed that their priorities were their daily basic needs and their children's education and that their income could not afford any insurance products. A few respondents also claimed that they were unaware of any insurance products and didn't have any idea. Respondents who are members of cooperatives like DCCCO and PHCCI were the ones who availed themselves of term life insurance. One cooperative member-respondent claimed that he availed of life insurance for his protection.

Table 6 presents the healthcare practices of the geriatrics. The result reveals a percentage of 100 for Philhealth. Most of the geriatrics respondents claim that Philhealth is the only healthcare they have availed themselves of because when they became Senior Citizens, they became automatic members of this health insurance. The respondents also claim that they availed themselves of PhilHealth during their employment period and continued during their retirement since their membership was already in their lifetime when they reached 60. It is worth noting that geriatrics need health insurance because it is a big help when they are sick. For “Long Term,” with a percentage of 3.17, and “Short Term Healthcare,” with a percentage of 1.59 with a scale of “very low importance.” All 63 respondents were members of Philhealth. Few respondents availed of “Short Term Healthcare” and “Long Term Healthcare”. Philhealth asserts that it is of “very high importance” to the respondents.

Table 6. *Perceived level of importance of the Geriatrics Retirement Preparedness on “healthcare”*

Investments	Yes (%)	Remarks	No (%)
Philhealth	100.00	Very High Importance	0.00
Long Term Healthcare	3.17	Very Low Importance	96.83
Short Term Healthcare	1.59	Very Low Importance	98.41

Reyes et al. (2019) reveal that most senior citizen members and dependents enjoy free healthcare insurance coverage from Philhealth. Most Filipinos indeed have only one health insurance, which is Philhealth, and in most cases during hospitalization, Philhealth benefits are insufficient to cover hospitalization expenses. One of the respondents availed himself of short-term care. The company provided this healthcare plan to which the respondent is currently connected. The respondent is 60 years old now and is currently processing retirement papers. Upon retirement, the benefits enjoyed by short-term care will be terminated. One respondent also availed of the critical illness. According to the respondent, this will greatly help when the respondents need it.

According to the article written by LaPonsie (2019), “Long Term Health Care” insurance is a coverage that will pay for assisted living, nursing home care, or home health care if you cannot care for yourself because of a chronic condition or disability. “Long-term healthcare” insurance can be a smart purchase when you consider that 70% of those turning age 65 today will need some long-term care, according to the U.S. Department of Health and Human Services. Furthermore, this will provide healthcare needs and finances when you retire or stop working. Most respondents have had Philhealth since they were 60, and they became automatic members of this health insurance. Only a few have availed themselves of short-term, long-term, and critical illness healthcare plans. The main reason for not availing themselves of other healthcare products is that they cannot afford them and do not know about these services or products.

3.3 Level of Importance of Financial Literacy

The respondents' uniform perception of financial literacy as extremely important highlights the growing recognition of its relevance across demographic groups. Financial literacy is essential for informed decision-making, effective budgeting, and financial stability (Lusardi & Mitchell, 2011). Studies have consistently shown that financial literacy reduces the likelihood of poor financial decisions, such as overspending or incurring unmanageable debt, and enhances the ability to save for future needs, including retirement (Hastings et al., 2013). Research by Hung et al. (2009) further emphasizes that both men and women benefit equally from financial

literacy, with gender-specific barriers diminishing as access to financial education increases. These findings align with the current study’s data, where both male and female respondents recognize financial literacy as extremely important, highlighting the universal relevance of financial education in diverse contexts (see Figure 1).

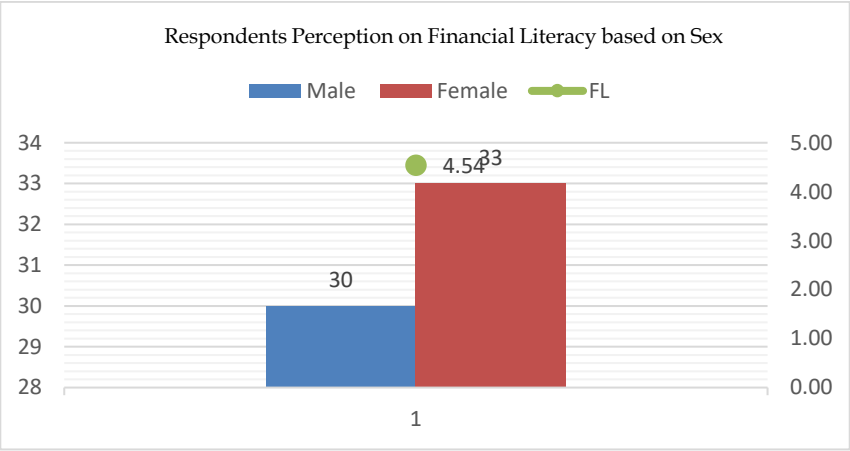


Figure 1. Respondents' perceptions on financial literacy based on sex

The implications of this finding are significant, suggesting that initiatives to improve financial literacy should continue to target both genders equally. Policymakers and educators can leverage this insight to design inclusive financial literacy programs that address men's and women's needs, fostering financial empowerment across communities. For instance, workshops and seminars tailored to various demographic groups could enhance individuals' capacity to manage finances effectively, regardless of gender. Moreover, this shared perception could serve as a foundation for encouraging household financial planning, where both partners actively participate in budgeting and financial decision-making, thereby improving overall financial well-being.

Figure 2 highlights respondents’ perceptions of the importance of financial literacy, grouped according to their educational attainment. The distribution shows that the elementary level constitutes 14.29%, elementary graduates account for 11.30%, high school level 8%, high school graduates 13%, college-level 16%, college graduates 33%, and those with a master’s degree comprise 4%. Despite the variations in educational attainment, all respondents unanimously agree that financial literacy is critical.

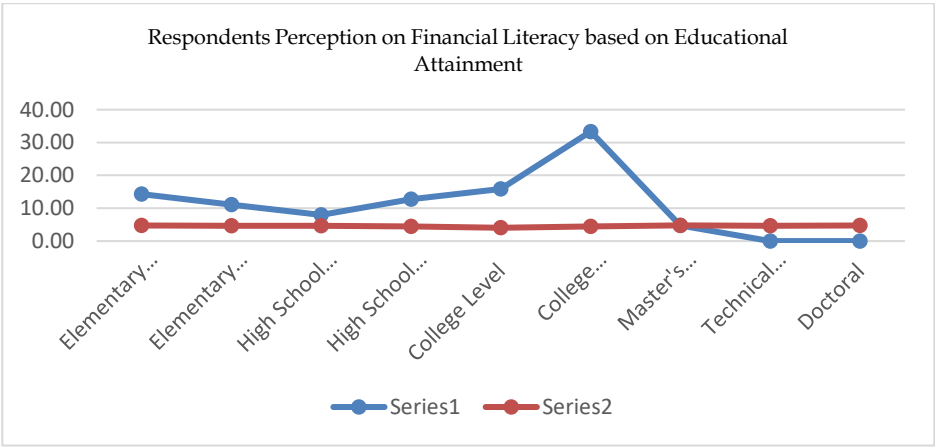


Figure 2. Respondents' perceptions of financial literacy based on educational attainment

This finding aligns with existing research emphasizing the critical role of financial literacy across different educational backgrounds. Lusardi and Mitchell (2011) found that while higher educational attainment often correlates with better financial literacy, even individuals with lower levels of education recognize its value in managing personal and household finances. Additionally, Hung et al. (2009) observed that targeted financial

education can benefit individuals at all educational levels, equipping them with the knowledge to make informed financial decisions. It suggests that educational interventions should be inclusive, catering to individuals across all educational levels. Tailored workshops or seminars addressing diverse audiences can ensure that financial literacy concepts are accessible and relevant, regardless of educational background. For instance, practical, scenario-based training for less-educated groups and advanced financial planning modules for highly educated individuals could maximize the impact of financial education efforts.

Figure 3 illustrates respondents' perceptions of the importance of financial literacy across various income levels, with a significant proportion earning between Php 5,000 and Php 20,000. Notably, those in lower income brackets perceive financial literacy as 'Extremely Important,' suggesting a heightened awareness of its role in effective financial management.

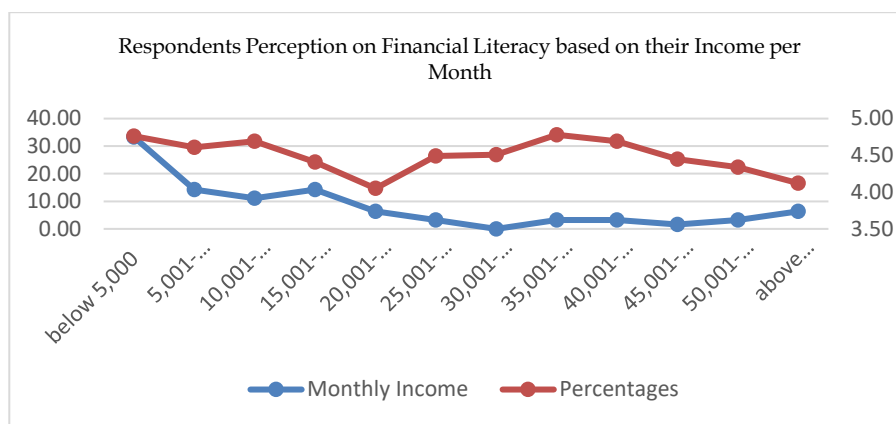


Figure 3. Respondents' perceptions of financial literacy based on income per month

This observation aligns with findings from the Bangko Sentral ng Pilipinas (BSP, 2024), which indicate that financial literacy is crucial for individuals across all income levels to make informed financial decisions and achieve economic well-being. These findings have significant implications for policymakers and financial educators. Tailored financial literacy programs targeting lower-income groups could enhance their financial decision-making skills, improving financial stability and resilience. By addressing the specific needs and challenges these individuals face, such initiatives can reduce financial vulnerability and promote inclusive economic growth.

3.4 Perceptions on the Importance of Financial Literacy

The finding in Table 7 highlights the respondents' perceptions of the importance of financial literacy. The results indicate that the first nine indicators exhibit a weighted mean from 4.41 to 4.78 with a scale of "extremely important." Financial literacy may greatly impact as it manifests as "extremely important" in perceived importance. The indicator "it helps people become self-sufficient and achieve financial freedom" has the highest weighted mean of 4.78. Such an indicator signifies that when a person is financially literate, it may follow that they are self-sufficient and, therefore, may achieve financial freedom.

In the follow-up interview by the researcher, most respondents claimed that they could not attend financial literacy seminars or lectures in their whole life. However, they enthusiastically say that "attending financial literacy seminar is extremely important" because it will help them manage their finances." Those respondents who claim to be cooperative members stated that they only attended lectures for membership. This implies that cooperative management could need to include financial literacy and financial education for their members to understand better how to manage their finances when they reach retirement age.

Table 7. *Perceptions on the importance of financial literacy*

Indicators	Level of Importance					Mean	Remarks
	5	4	3	2	1		
Self-sufficiency and financial freedom.	53	12	2	1	0	4.78	Extremely Important
Understanding the value of money and sound financial decisions.	54	13	0	1	0	4.76	Extremely Important
Wise investment decision,	53	11	4	0	0	4.72	Extremely Important
Financial preparedness for emergencies.	51	13	4	0	0	4.69	Extremely Important
A lifestyle that is financially balanced, sustainable, ethical, and responsible.	52	12	3	1	0	4.69	Extremely Important
Freedom from too many debts	49	12	7	0	0	4.61	Extremely Important
Knowledge and skills to manage money effectively,	41	21	6	0	0	4.51	Extremely Important
Sharing financial knowledge with the young generations.	43	16	8	1	0	4.49	Extremely Important
Savings to create income streams.	40	16	9	3	0	4.41	Extremely Important
Help boost the country's economy.	29	19	15	5	0	4.05	Very Important

Legend: 4.21 – 5.00 - Extremely Important, 3.41 – 4.20 – Very Important, 2.61 – 3.40 – Neutral, 1.81 – 2.60 – Important, 1.00 – 1.80 – Not Important

However, the 10th perceptual statement, which the geriatrics respondents were asked to cite their level of importance, indicates only “very important” that financial literacy “allows helping boost our country’s economy” as compared to all the other above-stated established indicators whereby each one gets a verbal description of “extremely important” The finding further emphasizes the need for all government instrumentalities and private educational institutions to venture into financial education scheme to raise awareness of the entire Filipino citizenry to undergo a sustaining financial literacy program for everyone. Thus elevating the quality of life or standard of Filipinos in taking care of their finances while they are still in their young age as they prepare themselves for life beyond the threshold of retirement age.

In this regard, Dwiastanti (2015) supports the study's finding that “if the individual has a good background in financial literacy, then he/she will be smarter in managing finances to achieve prosperity.” The study further states that “to achieve the individual condition, someone has a good level of literacy, there is the need for changes in behavior so that individuals will have the skills and confidence in using knowledge to be able to identify financial products and services.” Furthermore, the study of Surendar and Sarma (2018) reveals that most higher education teachers have a high level of financial literacy regarding financial knowledge, financial behavior, and financial attitude. Financial literacy generally increases with education level and the aggressiveness of the individual. Financial literacy is the start of an individual’s journey toward financial freedom. The possession of skills allows people to make smart decisions with their money. In the Philippines, there are a lot of financial educators who share their knowledge and help Filipinos to be financially literate. With proper knowledge, everyone can make the right decision, take action, and achieve the desired result.

3.5 Significant Relationship between Profile and Practices on Retirement Preparedness

Table 8 shows that the correlation coefficient for profile and practices on retirement preparedness is $r = .806$, which is significant at $p = .034$ @ 0.05 level of significance. Therefore, there is a statistically significant relationship between practice and profile. Based on the results, the decision is to reject the null hypothesis since the p-value of .034 is less than 0.05 level of significance. This means that there is a positive relationship between retirement preparedness and profile. The more income the respondents earn, the more they practice retirement preparedness. The higher education they attain, the more likely they will prepare for retirement. This further means that an increase in one variable will increase the others.

Table 8. *Significant relationship between profile and practices on retirement preparedness*

Test Variables	r	p-value	Decision	Remarks
Profile and Practices of Retirement Preparedness	0.806	0.034	Reject the null hypothesis	Significant

However, a strong correlation of 0.806 between profile and practices in preparing for retirement exists. This means that the profile of respondents, such as education, income, family size, and monthly expenditure, can affect their

practices and preparation for retirement. Most respondents claimed that their income is just enough for their daily needs, and they prioritize their children's education. That is why it is difficult for them to implement the practices since retirement planning is not a priority. No matter how high their education level, how small or big the family size is, and how high or low the monthly expenses greatly impact preparing for their retirement.

Table 9 shows that the correlation coefficient for practices on retirement preparedness and financial literacy is $r=0.594$ and is not significant at $p=.291$ @ 0.05 significance level. Therefore, there is no statistically significant relationship between practices on retirement preparedness and financial literacy. Based on the results, the decision fails to reject the null hypothesis since the p-value of .291 is higher than the 0.05 significance level. However, there is a correlation of 0.594 between financial literacy and practices in preparing for retirement, but they are statistically not significant. This means that financial literacy has no bearing on their practices in retirement planning. Most respondents claimed that financial literacy is extremely important, but they could not implement their retirement preparedness practices. Some factors affect their practices, such as their income being just enough for their daily needs and unaware of any investment vehicles or financial products.

Table 9. Significant Relationship between financial literacy and practices on retirement preparedness

Test Variables	r	p-value	Decision	Remarks
Practices on Retirement Preparedness vs. Financial Literacy	0.594	.291	Fail to Reject the null hypothesis	Not Significant

4.0 Conclusion

Most geriatrics aged 60 to 75 recognize the importance of financial literacy and emphasize the need to teach these concepts during adolescence. Regardless of sex, respondents unanimously view financial literacy as crucial for financial well-being. Many are married, hold higher education qualifications, and rely on pensions from GSIS or SSS, with a significant portion earning below ₱5,000 monthly. Retirement preparedness practices include mandatory pension funds, savings in cooperatives for higher returns, and strong debt management, though investment in life insurance is limited. Healthcare planning is evident with universal membership in PhilHealth. Despite the perceived importance of financial literacy, there is no significant correlation between financial literacy and retirement preparedness practices. Early financial education should be integrated into school curricula to address this gap and teach budgeting, saving, and investing. Retirement planning must also be prioritized through the establishment of emergency funds and investment in diverse financial instruments. Promoting debt management, income protection through life insurance, and long-term healthcare planning is essential. Accessible financial literacy programs through training, seminars, and academic initiatives can enhance financial knowledge across all ages, enabling individuals to secure their financial future and achieve long-term stability.

5.0 Contributions of Authors

Marites A. Andres, Lovely R. Tinguha, and Mary Monette W. Diputado were primarily responsible for gathering and encoding the results. Romario P. Ybañez conducted the data analysis and interpretation, ensuring accurate insights from the collected data. Editing and finalizing the manuscript was a collaborative effort among all the researchers, reflecting their shared contributions to the completion of the study.

6.0 Funding

The authors entirely self-funded this research, demonstrating their commitment to the study and its successful completion.

7.0 Conflict of Interests

There is no conflict of interest.

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Lived Experiences of LGBTQIA+ Community in Administrative Leadership of School Heads

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Abstract. This study explored the administrative leadership of LGBTQIA+ school heads in private high schools in the province of Quezon. The interview was the primary tool used in the form of semi-structured interview questions that were systematically crafted to give way to the target respondents based on their lived experience. Coding and thematic analysis were done to deeply analyze the responses from the participants. Based on the findings, the identity politics among school heads were described as having genderless and affirmative leadership. Creating inclusive environments, greater professional leadership, and identity reaffirmation and community acceptance were found useful in surpassing the challenges faced by LGBTQIA+ leaders. Reliving the unconventional leadership representations of LGBTQIA+ school heads focuses on reflecting transformative leadership and advocating inclusivity. In the private school setting, there is many recommendations formulated based on the responses of the participants. Though there are already existing policies on gender responsiveness, there is still room for modification to set clearer, more inclusive, and comprehensive policies. School leaders can make school safe and inclusive for all. Learning institutions can, therefore, foster effective and responsive school culture for LGBTQIA+ educators in their workplace. Undertaking this study discovered the identity politics, struggles, and representations of the LGBTQ+ Community. It explored their significant lived experiences, which became an eye-opener to the current status, experienced struggles, and representation of the LGBTQIA+ school heads, which could leave an impact on the target readers of the substantial contributions of these leaders in administrative leadership and gender studies. The result of the study can bring change among LGBTQIA+ school heads and teachers and encourage administrative change and integration of evidenced-based solutions that support the LGBTQIA+ community.

Keywords: Advocating inclusivity; Genderless leadership; Identity politics; Representation; Struggles.

1.0 Introduction

Leadership is a major concern to organizations for its significant role in determining their success. The leader is responsible for directing subordinates' efforts to achieve organizational goals and objectives. Educational institutions are not exempted from this leadership influence. It impacts the motivations and capacities of teachers, as well as the school atmosphere and environment, to improve school outcomes (Pont et al., 2019). Principals perform a vital function in secondary school administration as the head of school administration. The individuals who hold the position of "school leaders" have evolved away from stereotypical straight white males to individuals from all walks of life. Although researchers have begun to explore the experiences of Lesbian, Gay, Bisexual, and Transgender (LGBT) individuals and their experiences in the workplace and issues related to LGBT, few studies have explored the experiences of LGBT principals within their role as school leaders (Williams, 2018).

To address this, Dumaresq, in 2016, posited that educational leaders must take the initiative to bring about changes that will make the culture of schools more inclusive. However, educators who are gay, lesbian, bisexual, and transgender (queer) are often stymied in this kind of social justice work for fear of losing their jobs. Further, despite their potential for enacting social justice, a vast majority of LGBT educational leaders remain “cloaked in secrecy” for their protection. They are “invisible” to their counterparts and often pass themselves off as “straight.” Lugg (2003, as cited by Denton, 2015) stated that LGBT school administrators “must be willing to sacrifice a core portion of their identity; they must be constantly on guard that they do not give any clues to their actual identity” in order to retain their position. In no small measure, LGBT educational leaders are forced to walk a tenuous line of assimilation and invisibility depending on where one works and resides; coming out may very well be foolhardy.”.

Moreover, in 2021, Simons et al. claimed that a scarcity of research exists on the lived experiences of educators and school heads who identify themselves as lesbian, gay, and bisexual (LGB). For educators and school heads who identify as LGB, navigating the complex nature of one’s unique identity and additional work identity leads to attempts to balance their personal and professional selves in both congruent and incongruent ways. This was supported by Prior (2017), who noted that progress toward LGBTQ inclusion has been slow and historically fraught with pushback from some institutional leaders and political strife.

Therefore, in order to address this and other gender-related problems, there is a dire need for continued striving towards equity and justice within the realm of sexual diversity of school heads. More so, undertaking this study would identify the identity politics, struggles, and representations of the LGBTQ+ community, explore their significant lived experiences, and turn them into substantial contributions to administrative leadership and gender studies. The researcher hopes it could bring change among LGBTQIA+ school heads and teachers and encourage administrative changes and integration of evidence-based solutions that support the LGBTQIA+ community.

2.0 Methodology

2.1 Research Design

To characterize the nature of the situation at the time of the study, the researcher used a qualitative approach in line with the stated aims of this academic endeavor. In addition, the phenomenological research design was utilized in the study to investigate research objectives. As Delve (2022) cited, this design seeks to understand and describe the universal essence of a phenomenon. The approach investigates the everyday experiences of human beings while suspending the researchers’ preconceived assumptions about the phenomenon. In-depth interviews were used in the study, and in addition to the semi-structured questions that were prearranged in advance, follow-up and emergent questions were also asked. The responses from the in-depth interview were transcribed and coded through open coding to generate themes and focused on the commonality of the lived experiences of LGBTQIA+ school heads in Quezon.

2.2 Research Locale

The study was carried out in the four (4) districts of Quezon, which has two (2) participants from the first (1st) district, four (4) from the second (2nd), one (1) from the third (3rd), and one (1) from the fourth (4th) district who belong to the gay and bisexual community.

2.3 Research Participants

Eight (8) school heads from the LGBTQIA+ community were involved in this undertaking. This study employed the criterion sampling technique when choosing the respondents. It is a purposive sampling method used in research to select individuals based on specific predetermined criteria or characteristics. The inclusion criteria for the study are school heads who self-identified as LGBTQIA+, who have administrative tasks, who have specific experiences and skills in leadership, and who are willing to participate in the study.

As stated by Babu, a faculty member at Nanyang Business School (2024), based on a study published in the National Center for Biotechnology Information (NCBI), the number of participants in qualitative research is determined by the principle of saturation, where it is the point at which no new information is obtained from additional participants. The study suggests that 8-12 participants are enough to reach saturation in most

qualitative research studies. This was also supported by an article published by Scribblr, which states that the sample size for qualitative research can be as low as 6–10 participants.

2.4 Research Instrument

The study was limited to using the pure qualitative research method for this involved interview as its instrumentation. An interview is a qualitative research method that relies on asking questions to collect data. Specifically, the researcher used a semi-structured interview. George (2022) mentioned that this type of interview is a blend of structured and unstructured interviews. While the interviewer has a general plan for what they want to ask, the questions do not have to follow a particular phrasing or order. This is often open-ended, allowing for flexibility, but follows a predetermined thematic framework, giving a sense of order. The study used interview questions as the main tool for gathering data. The questionnaire constructed by the researcher contained three (3) parts.

First, to help determine the identity politics, struggles, and representation of LGBTQIA+ school heads. The next part described the struggles of the LGBTQIA+ community in the administrative leadership of the school heads in Quezon Province. The last part of the instrument explored the representation of the LGBTQIA+ community in the administrative leadership of school heads in Quezon Province. The questionnaire draft was referred to the researcher's adviser for comments and suggestions. The researcher sought experts' help for proper guidance, suggestions, and validation. After this, the researcher applied the suggestions, and then the revised instrument was submitted to the validators to check if the inputs were followed.

2.5 Data Gathering Procedure

This dissertation followed several processes to complete the study. This composed the conduct interview questions for the target participants, as well as the interpretation and analysis of gathered information. For the first aspect, the researcher sought approval to conduct the study through the university where she was enrolled. After the clearance, the researcher asked for approval from the Education Program Supervisor (EPS) in charge of private schools in Quezon, asking to have a one-on-one interview with the target participants of the study. Following this, a letter was also addressed to the president of United Private Education Institutions in Quezon (UPEIQ) to determine which school heads would participate in the study. The researcher scheduled a face-to-face interview based on the availability of the participants. However, those participants who wished to have online interviews were met through Zoom meetings. All the interviews were audio-recorded with consent given. The information sheet and consent forms were provided more than 24 hours before the interview to allow thinking time for the participants. Written informed consent was obtained from each participant before conducting the interviews.

2.6 Ethical Considerations

In the interview, the researcher introduced herself first, informed participants of the purpose of the study, and took several ethical considerations into account to ensure their rights. Confidentiality was assured that identifying information would not be made available to anyone not directly involved in the study. Participants were invited at the most convenient time and place. The participants were informed about the procedures and risks involved in the research. Hence, to ensure ethical consideration, the researcher did not mention any names, organizations, or institutions involved in the study but instead used the acronym LGBTQIA+ to assign numbers for each participant.

3.0 Results and Discussion

Theme 1: Genderless Leadership

The most interesting thing highlighted from interviews was that the leaders, regardless of their gender, shared similar opinions on effective leadership and lessons learned from their leadership journey. Results of interviews confirm that there is no difference in leadership qualities, attributes, and characteristics between female and male leaders. In other words, leadership has no gender. This finding runs parallel to the study conducted by Simons (2021), who revealed that leaders of any gender still chose to dedicate their lives to leading and that after serving for many years in education, they were able to continue learning and doing better in school. They emphasized that a committed school head chooses to serve the betterment of their colleagues and their workplace. Therefore, it is concluded that regardless of their gender identity, leaders and subordinates unite together to pursue higher-

order common goals such that both leaders and followers can raise each other to higher levels of motivation, which implies that the leader and subordinate purposes become one fused, united, and collective purpose (Eboka, 2016).

Normalizing LGBTQIA+ roles and being better represented, these answers were often revealed in the interviews with the participants. When the researcher asked how their followers respond to them as members of the LGBTQIA+ community, some of them voiced out that:

They respond to me and treat me as a normal individual without considering my gender because they believe that being part of the LGBTQIA+ will not affect my performance (Par L).

They respond similarly to other bosses, regardless of gender. In my experience, they generally adhere to and fulfill most of the tasks I assign them, submitting or complying as required (Par Q).

Fostering inclusivity, visibility, and empowerment, these aspects delve into how the participants see situations where LGBTQIA+ school head identity is important, together with the conditions that support or penalize them. The responses affirm that LGBTQIA+ school heads' identity is important in situations where LGBTQIA+ students, staff, and families need representation, support, and understanding. It plays a crucial role in opening gender sensitivity, enriching decision-making processes, and breaking stigmas and stereotypes about leadership positions.

School administrators who identify as LGBTQIA+ can contribute to more equitable policies and procedures that meet the needs of LGBTQIA+ people by bringing their distinct perspectives and experiences to the table community. Having helpful coworkers, inclusive school rules, and a climate that promotes diversity and respect are all factors that help LGBTQIA+ leaders. On the other hand, leaders who encounter prejudice, discrimination, or a lack of institutional support could find it difficult to fully express who they are as people and reach their full leadership potential. Discriminatory behaviors or attitudes in the classroom can impair students' productivity and well-being, which may result in consequences for their professional development or career advancement (Par T).

This quote poignantly illustrates the subtle yet profound ways in which LGBTQIA+ school heads see the importance of revealing their identity to their subordinates. Weller supported this in 2018 and emphasized that visibility matters. The LGBT+ community repeatedly repeats this message: representation of LGBT+ people and relationships promotes acceptance within communities and reaffirms confidence in one's own identity.

Modeling authenticity encapsulates authentic leaders acting as role models, leading by example, and displaying appropriate behaviors during their interactions with their subordinates. They earn trust because of their genuineness and because they lead ethically while maintaining integrity. As such, an LGBTQ leader does not possess universally specific characteristics. They access leadership characteristics that exist within a leader-navigator framework. The LGBTQ leader-navigator knows they are living and leading in a time that has been filled with history and culture of contempt for LGBTQ folk. They know they exist outside the majority culture. They know they came to own and express their identity with risk and courage. They also know that they own many other identities as well.

For me, the importance of LGBTQIA leaders self-identifying lies in the empowerment it brings to both the individual and the community. Openly identifying LGBTQIA leaders can serve as visible role models, fostering a more inclusive and accepting school environment. Additionally, self-identification allows for authentic representation, promoting understanding and empathy among students and staff (Part I).

Aside from genderless leadership, it was exposed that affirmative leadership also exists in LGBTQIA+ school heads. It was found that an affirmative leader instigates and mobilizes positive emotions and thoughts, processes, and experiences. On the other hand, an affirmative leader eliminates negative mental and emotional currents and directs the focus toward a mutual aim—self-realization. In this way, better conditions for individual and collective life and work are created. Such a leader is like a captain of a sports team who manages the present and paves the road for a better future by balancing interpersonal relations, harmonizing his abilities and skills with those of his colleagues, and applying different types of approaches and diverse styles of work (Gruicic, 2019). As the interview with the participants continued, one participant said:

I stand with our school's philosophy: "Believing in anything is the first step in making things possible." I am looking at what I can do because, as I said, if I mind what people will say and listen to what others have to say, maybe I will not get to the point that I am here. I always say that even to my students, what you allow is what we continue, so if you allow yourself to be judged or somehow allow fear to lead you, you will not grow, so I believe in risk-taking. As for risk-taking, it is not saying that you have to go this way or that way; what I mean is to explore, try other things, and at the same time consider your boundaries as professionals (Par T).

A positive outlook on LGBTQIA+ leaders highlights that positive LGBTQIA+ identities are affirmed through inspiring firsthand accounts based on the stories shared by the participants. Focusing on how LGBTQ-identified individuals can cultivate a sense of well-being and a personal identity that allows them to flourish in all areas of life, the authors explore various themes. Through the personal stories from people with a variety of backgrounds and gender and sexual identities, readers will learn more about expressing gender and sexuality, creating strong and intimate relationships, exploring unique perspectives on empathy, compassion, and social justice, belonging to communities and acting as role models and mentors; and enjoying the benefits of living an authentic life.

When it comes to being an administrator, it does not matter even if you are a member of LGBTQIA+ or not. So, the main reason is your ability and capability to run a school (Par B).

Highly significant and deserving of respect, this sub-theme reflects moments of realization that LGBTQIA+ school heads who have administrative tasks are highly significant in the roles they play and deserving of respect. The interview with them revealed that there are people in the LGBTQIA+ community who are recognized, respected, and appreciated for their unique perspectives and gifts. As to wit:

I consider their status highly significant and deserving of respect, equivalent to that of both women and men. They demonstrate remarkable creativity in their administrative roles. Many actively promote inclusive policies and nurture supportive environments for students, staff, and families. Additionally, some display a firm demeanor in their work, which reflects their authority and command. This underscores the importance of adherence to established standards, rejecting the notion of leniency in professional settings (Par Q).

They are highly effective when it comes to leadership because, Ma'am, from my observation, I know a lot of leaders who are part of the LGBTQIA+ community who are really effective in their line of work (Par G).

Promoting diversity and a culture of creativity deals with a sense of belonging and psychological safety, which allows subordinates to feel comfortable sharing their ideas without fear of judgment or criticism. It was revealed through the conversation with the participants that when the members feel valued and supported, they are more likely to take risks and think outside the box. This, in turn, leads to more innovative ideas and solutions. In addition, it was mentioned that an inclusive culture promotes diversity and equity, which is crucial for a creative working environment. A diverse workforce brings a variety of perspectives and experiences, which can spark new ideas and ways of thinking. Thus, an inclusive culture ensures that everyone has equal opportunities to contribute and be heard, regardless of background or identity.

LGBTQIA+ leadership matters in creating inclusive environments and representing diverse perspectives. Support for leaders who self-identify as sexual minorities can include promoting diversity and inclusion initiatives, providing resources for LGBTQIA+ individuals, and fostering a safe and supportive work environment. As far as I know, Sen. Risa Hontiveros is the proponent of the SOGIE Bill in the Philippines, which aims for LGBTQIA+ people to have equal rights (Par L).

Addressing discrimination and challenges is prevalent among the participants, stemming from stories they shared based on their experiences. These prove that challenges still exist when it comes to LGBTQIA+ leadership, which reflects that these should be voiced out and addressed accordingly.

Conversely, the conditions that may penalize LGBTQIA+ individuals include experiencing discrimination or harassment, lacking legal protections, facing stereotypes regarding their ability to hold leadership positions, and encountering a lack of support from their peers (Par G).

On the other hand, based on my opinion, a potential downside of being part of the LGBTQIA+ community is the tendency for some people to take you for granted and underestimate you, especially those conservative individuals who are still fixated on the notion that there are only two types of gender (Par +).

Creating an atmosphere of acceptance is projected into the influence of identity in schools. LGBTQIA+ school heads have a significant influence in terms of promoting inclusivity and fairness, fostering respect and a culture of creativity, and welcoming and supporting LGBTQIA+ teachers.

I believe my influence has substantially shifted some of their perspectives on approaching work. We welcome and support teachers who identify within this spectrum, even considering them for advancement to higher positions, provided they maintain professionalism and adhere to the institution's standards (Par Q).

According to Kosciw (2014), schools are the primary social context where marginalized students spend much of their day. The school setting can be a hostile environment where marginalized students are at risk of experiencing adversity, such as verbal and physical harassment, institutional bias, and an exclusive school culture. Therefore, district and school leaders must impact and guide how marginalized students are supported and included in the school setting. Indeed, school leaders can play an integral role in “creating schools that value individual differences.”

Theme 2: The Cycle of Fears: Stories of Challenges Faced by LGBTQIA+ School Heads

Contrary to happy and accepted leadership, as revealed by participants, it cannot be denied that before LGBTQIA+ school heads achieve inclusivity and empowerment, they still face challenges as they embark on their journey to leadership.

An inclusive environment is about creating a workplace where everyone is treated with respect and valued for their contributions. In an inclusive workplace, colleagues and customers are treated with dignity, respect, and equality; these values are reflected in the company's mission and vision (Ho, 2023). In today's globalized and interconnected world, the importance of inclusivity regarding gender in the workplace cannot be overstated. It goes beyond mere compliance with regulations; it is about fostering an environment where everyone, regardless of gender identity, feels valued, respected, and empowered to contribute their best.

Inclusivity in the workplace can be achieved through granting equal treatment and protection. The researcher remembered that some participants shared their experiences emphasizing the need to create an inclusive environment for LGBTQIA+ school heads in the workplace.

With the implementation of DepEd Order No. 32, s. 2017, our educational landscape now has a formal foundation, specifically in providing support and opportunities for LGBTQIA+ members as sexual minorities. The policy states that not only students but also department employees are granted equal treatment and protection against discrimination, regardless of their gender (Par +).

In an article published by Buccholz (2023), having LGBTQIA+ leaders in positions of power and influence sends a powerful message to individuals throughout industries, encouraging others to aspire to take on similar roles. A diverse representation of employees has been shown to encourage others to explore their sexual orientation and gender identity to achieve their goals while boosting their self-esteem and inspiring others to be authentic and proud of their identity. Additionally, LGBTQIA+ leaders bring diverse perspectives to the table. Their life experiences and unique insights contribute to more comprehensive decision-making, which has been proven to benefit organizations and society. Typically, the following results support this:

LGBTQIA+ presence in school leadership is essential for creating inclusive environments and meeting the particular needs of LGBTQIA+ staff, students, and families. LGBTQIA+ school administrators can offer a unique perspective and compassion to problems, including bullying, discrimination, and mental health support for LGBTQIA+ students (Par B).

Leadership is a skill that is not reserved solely for managers, directors, VPs, or anyone else who is the head of a department of a company. It is a crucial quality that any valuable employee should demonstrate in some form or another in the workplace. The term "leadership" can encompass a wide variety of actions and attitudes; it does not

necessarily apply only to a single leader of a group. Leadership can manifest in small actions that can ultimately result in change. As such, it is an essential part of the progress of a company and your individual growth as a professional. Therefore, professional leadership is a process by which a person directs and inspires a team to follow a vision or reach a goal that must be practiced daily while incorporating regular reflection and coaching.

This can be achieved through conformity with policies; based on the participants' responses, they believe this is essential for fostering a harmonious, productive, and legally compliant environment. Policies serve as guiding principles that outline an organization's expectations, standards, and procedures. This would shed light on the challenges they have experienced. As to wit:

As an LGBTQIA+ leader, I prioritize ensuring everyone feels welcome and respected. This means having inclusive policies, providing support services, leading by example, and collaborating with others to create a supportive environment for LGBTQIA+ individuals in the school community (Par G).

In the meantime, as the interview progressed, one of the study's participants exposed the stereotypes, biases, and discriminations that are the common struggles encountered by school heads. According to Pagulayan (2020), the LGBTQIA+ community faces alarming rates of gender-based violence and discrimination. From 2010 to 2020, at least 50 transgender or non-binary Filipinos were murdered. Studies showed that around half of transgender people and bisexual women would experience sexual violence during their lifetime. Another type of violence directed at the LGBTQIA+ community is micro-aggressions, indirect or subtle acts of discrimination against marginalized groups in their daily lives. It often manifests through conscious or unconscious discriminatory or transphobic remarks. Even though there is already existing gender neutrality in language, LGBTQIA+ members are still confronted by different discriminatory experiences in public and private spaces.

Even though this equality of human rights that protects and respects Filipino people is strongly grounded in the 1987 Philippine Constitution, it enshrines in its due process and equal protection clauses that “No person shall be deprived of life, liberty, or property without due process of law, nor shall any person be denied the equal protection of the laws.” However, with the traditional perception and norms brought by religious views and opinions on sexual preference and gender roles, lesbian, gay, bisexual, and transgender (LGBT) people in the Philippines, whether professionals or not, have experienced discrimination and non-acceptance (United Nations Development Program, 2014). With the non-existence of effective implementation and monitoring of policies, the teachers experienced many discrimination cases. Marginalization in the education profession is not only permissible, but it is extensively tolerated in several public learning institutions (Bishop et al., 2010, as cited by Añonuevo & Digo, 2023).

Theme 3: Identity Reaffirmation and Community Acceptance

Identity reaffirmation is a profound process through which individuals validate and embrace their sense of self, often in response to internal or external challenges that may challenge their identity. It involves acknowledging and affirming one's core beliefs, values, and personal attributes. It is a process that occurs in various contexts, including cultural, social, professional, and personal spheres. In today's diverse and interconnected world, individuals often encounter situations or experiences that may call into question their identity, whether it relates to ethnicity, gender, sexual orientation, religious beliefs, or other aspects of personal identity. Equality means more than passing laws. The struggle is won in the hearts and minds of our communities. While political wins are important for the LGBTQ+ community, true LGBTQ acceptance goes deeper.

At present, I have not encountered any challenges related to my gender preferences from others within our institution. However, should such situations arise, I will respond calmly and accept their reactions. Ultimately, I will reaffirm my identity and demonstrate that I refuse to be diminished by their perceptions. As a guiding principle, if they cannot accept me for who I am, it does not concern me as long as I lead a peaceful life and do not harm others (Par Q).

Being embraced and supported is prevalent in the participants' responses; this means that by recognizing and valuing subordinates in the workplace, the institution can foster a culture of engagement, productivity, and innovation. This, in turn, leads to higher retention rates, a positive company culture, and improved overall performance. When asked about the support given to LGBTQIA+ school heads, they answered:

As an LGBTQIA leader, my followers respond with various reactions, often reflecting the diversity within the LGBTQIA community. Many express appreciation for my representation and advocacy, feeling supported and empowered. Some may share similar experiences, forming a sense of solidarity and understanding. However, in all honesty, responses also vary, with some individuals possibly harboring biases or misunderstandings. My followers' responses emphasize the importance of visibility, representation, and ongoing dialogue to promote inclusivity and acceptance (Par I).

When asked about the response of their followers to them as LGBTQIA+ school heads, most of the participants received positive responses, leading to supporting them with their decisions and projects in school. Their followers respond to them very professionally, showing authority and respect for their positions. The participants considered themselves blessed, for they were treated positively. They said:

They respond to me and treat me as a normal individual without considering my gender because they believe that being part of the LGBTQIA+ will not affect my performance (Par L).

I am blessed and fortunate to work with teachers whom I prefer to address as partners rather than followers. They are remarkably objective, valuing individuals based not on their gender but on their capabilities, skills, and character – attributes they recognize as indicative of a person worthy of respect and admiration (Par A).

Proving it more, Komiyes, Lucas, and McMahon, as cited by Pryor (2017), claimed that leadership could be located in specific traits of leaders. That is why followers respond to LGBTQIA+ leaders similarly to other members because they see characteristics of these leaders like self-confidence, intelligence, or charisma. An effective leader-follower dynamic is characterized by a strong, mutually supportive peer relationship. However, one party officially has the final authority. When a leader communicates trust and respect for followers' abilities to perform and achieve, the internal motivation of the followers drives them to succeed (Cruickshank, 2017).

As Buchholz (2023b) quoted, "All leaders—and by extension, all people—want to be respected for their contributions and not for their sexual orientation. At the same time, the best leaders do so with authenticity and encourage their teams to do the same, so they often have to be cognizant of balancing the two." This is similar to the study's findings, which show that in terms of administrative leadership, followers of LGBTQIA+ identity school heads respond positively and with professionalism. The following statements prove this:

My followers respond to me as LGBTQIA+ by supporting my decisions and projects (Par L).

I think my followers respond to me professionally (Pag G).

I believe that my followers react to me professionally (Par B).

They react similarly to male and female leaders ((Par T).

Meanwhile, if a follower does not respond to the LGBTQIA+ school head, open communication should be prioritized. This will lead to honest and respectful dialogues with them to understand their perspectives and address concerns they may have regarding LGBTQIA+ leadership.

If there were instances where they did not respond to me as their leader, I would address the matter privately, discussing any concerns regarding my approach to work or my role as their head. I would explain that my actions are not personal but aimed at benefiting the school and the community. Additionally, I would emphasize the importance of separating personal issues from work-related matters (Par Q).

Fostering open communication aims to promote understanding, trust, and respect among all team members. This approach allows for mutual understanding and creates an environment where everyone feels valued and respected for who they are. Placing a higher priority on transparency is another approach that will help address this. Sincere and polite conversations can bring about viewpoints addressing any worries they might have about LGBTQIA+ leadership.

Theme 4: Courageous Trailblazing: Exposing Representations of LGBTQIA+ School Heads

Analysis of the research enabled the researcher to expose the representations of LGBTQIA+ school heads. The emergence of LGBTQIA+ leaders has challenged conventional norms of leadership, offering unique perspectives

and experiences that enrich our understanding of effective leadership. The visibility of LGBTQIA+ leaders in media, politics, and other spheres profoundly influenced societal perceptions and policies. Positive representation fosters acceptance and empathy, challenging stereotypes and fostering a more inclusive society. Moreover, LGBTQIA+ leaders' advocacy has led to legislative changes, such as marriage equality and anti-discrimination protections, signaling progress toward greater equality and justice.

The participants described themselves as transformational leaders as they inspire employees to strive beyond required expectations to work toward a shared vision. To wit:

I see myself as a transformative leader who encourages, inspires, and motivates my co-workers to innovate and, if necessary, create change (Par T).

I see myself as an empowered and transformational leader, but I'm also very sensitive to my subordinates. I always look to their reactions because, you know, I cannot please everyone (Par I).

As such, transformational leaders promote leaders and followers to engage in mutual respect and power-sharing interactions. Those leaders who enact transformational leadership influence their followers by behaving in ways that motivate and inspire them. They communicate their expectations, demonstrate a commitment to a shared vision and goals, seek new ideas from others, and promote the individual development of others. Transformational leaders influence their followers. Additionally, these leaders actively solicit new ideas and promote supportive climates. More importantly, they promote the individual development of others (Soria, 2020).

As the interview progresses, their experiences disclose that most LGBTQIA+ school heads demonstrate creativity. They described themselves as creative. They are talented and creative in school, particularly in organizing various affairs and events. Some are artistic in school planning, while others are talented in designing stages, beautifying surroundings, and training the skills of pupils in dance, the arts, and others.

I believe an LGBTQIA+ leader is very creative, not only when it comes to ideas that we want to share with our faculty but also when it comes to planning activities within the school. Not only leaders but also teachers who are part of the LGBTQIA+ community greatly contribute to its success (Par G).

According to the information provided by participants, LGBTQIA+ people are innovative in bringing about beneficial changes for the community and school, not only in the four corners of the classroom. It also demonstrates that, besides imparting knowledge to students, they serve as advisors, beauticians, talent scouts, trainers, designers, decorators, inventors, and artists in professional environments. Moreover, they carry out their responsibilities effectively to better serve the needs of their class, their coworkers, and the institution. Teachers shared experiences mirrored those of Simons et al. (2021), who discovered that LGBT teachers must be creative in the classroom.

It was also found that LGBTQIA+ school heads sustain collaboration among their subordinates. A sustained collaborative workplace begins with leadership encouraging everyone to focus outwardly. It ends with sharing resources, expertise, and goals to achieve missions better and improve community outcomes for the long term.

Effective administrative leadership involves making decisions that benefit the school, colleagues, students, and the community. It also entails identifying the institution's strengths and weaknesses. With this understanding, leaders can cultivate a work ethic that fosters collaboration, fairness, and honesty, promoting a just and equitable environment (Par Q).

At its core, leadership is about inspiring others. It can be to achieve a common goal, become the best version of oneself, or drive positive change. However, traditional leadership is confined by the social construction society has labeled it with. The notion is that there must be one person above all else who leads and directs others and that there is an authoritarian structure involved in traditional leadership. Queer leadership aims to dismantle these conventional principles, demonstrating that leadership can be a collective effort to inspire and drive positive change (Leithwood et al., 2004, as cited by Williams, 2018).

It was found out that LGBTQIA+ school heads advocate inclusivity in the workplace by embracing diversity, promoting empathy and understanding, advocating for equality, embodying the principle of inclusive and transformative leadership, fostering a collaborative and inclusive environment, and raising voices in order for the people to know that LGBTQIA+ exist in society. This is further elaborated on their statements:

An LGBTQIA+ school head can better integrate leadership and followership by fostering a collaborative and inclusive environment where all voices are heard and valued. They can encourage open communication, empower others to take on leadership roles and prioritize building strong relationships with their team. LGBTQIA+ leaders often represent contemporary approaches to leadership effectiveness by embracing diversity, promoting empathy and understanding, and advocating for equality and inclusion in all aspects of their leadership. Their ability to navigate complex social dynamics and champion marginalized voices can lead to more innovative and inclusive solutions within their school community (Par L).

Our contributions to the school include fostering an inclusive environment where individuals of different genders can collaborate effectively and promoting a safe and supportive atmosphere (Par Q).

Leadership may be considered the process (act) of influencing the activities of an organized group in its efforts toward goal setting and goal achievement (Stogdill, quoted in Bogenschneider, 2016). It occurs when persons engage with others in such a way that leaders and followers raise one another to higher levels of motivation and morality. Followership is attaining one's goals by being influenced by a leader to participate in individual or group efforts toward organizational goals in a given situation. Followership becomes seen as a function of the follower, the leader, and situational variables. Most school head participants enacted transformative practices to create conditions to support marginalized students. These transformative actions are essential for sustained change (Gooden & Dantley, 2012; Soria et al., 2020).

As an LGBTQIA+ school head in the Philippines, we can significantly contribute to our school and the educational system. For instance, we can lead the establishment of safe spaces within the school where LGBTQIA+ students and staff can express themselves without fear of discrimination or harassment. As we all know, safe spaces contribute to mental health and well-being, consistent with Dep Ed's commitment to providing a supportive and nurturing learning environment. However, our most important contribution as school leaders is to be open and visible as part of the LGBTQIA+ community, promoting a positive role model for students and staff. Visible leadership creates a culture of acceptance and inclusivity, aligning with the Department of Education's commitment to promoting positive values and ethical behavior (Par +).

Data analysis revealed that raising the voices of LGBTQIA+ school heads and community members will help people know that LGBTQIA+ school leaders exist. Leaders reported formal and informal structures and systems that provided opportunities to learn stakeholders' concerns, ideas, and solutions, which in turn influenced the leaders' actions.

As a result of their intentional interactions with various district and community stakeholders, district- and school-level leaders shared their explicit and sustained efforts to create responsive actions to support marginalized youth. Aligned to previous research, Bayside Hill leaders described their collective and individual leadership practices to enable their students to thrive socially and emotionally and to feel connected and safe in their school (Kosciw et al., 2014). Additionally, district and school leaders reported establishing affinity groups with a culturally responsive lens (Khalifa et al., 2016).

Higher education leadership in the 21st century requires new approaches to understanding and practicing leadership. Scholarship and practice have witnessed a shift toward more socially responsible forms of leadership, yet leaders must learn to navigate oftentimes unwelcoming bureaucratic structures to advance social justice and equity (Pryor, 2017).

The interview with the participants revealed that school leaders may include LGBTQIA+ policies and representation that address gender issues, organize school-based seminars and trainings on gender mainstreaming issues, and strengthen the implementation of gender-responsive basic education to capacitate learners' gender-related concepts. These are evidently depicted with the following verbalizations of the respondents below:

I recommend implementing clear and inclusive policies covering non-discrimination, anti-bullying, and access to support resources. Provide ongoing education and training for staff to increase awareness of LGBTQIA+ issues and establish dedicated support resources such as student clubs and counseling services. Promote LGBTQIA+ visibility in the curriculum and extracurricular activities and engage with families and communities to build understanding and support networks. Offer them professional development opportunities for LGBTQIA+ staff and regularly review and update policies to remain responsive to evolving needs (Par B).

I recommend that the Department of Education, the highest agency in charge of all educational institutions in the country, be more dynamic and visible in implementing DepEd Order No. 32, Series of 2017, not just in public schools but also in private schools. This will achieve the main goal and objective of the policy and realize the concepts of inclusivity, gender responsiveness, and celebrating diversity (Par A).

In the private school setting, many recommendations are formulated based on the participants' responses. Though there are already existing policies on gender responsiveness, there is still room for modification to set clearer, more inclusive, and more comprehensive policies. School leaders can make school safe and inclusive for all. Learning institutions can, therefore, foster an effective and responsive school culture for lesbian, gay, bisexual, and transgender (LGBT) educators in their workplace. They also need to feel safe and accepted to provide their students with the best education (Wright et al., 2019, as cited by Añonuevo & Digo, 2023).

According to Wright et al. (2019), school leaders continue to struggle with acknowledging and improving the experiences of LGBT educators. Lugg and Tooms (2010) discussed levels of “differentiated citizenship” for LGBT people, emphasizing that educators identifying as LGBT have had some of the most historically difficult experiences of all. These difficulties include living with the daily stress from fear of job loss to the level of acceptance by peers and other stakeholders and their outness in the workplace. In addition, Marshall and Hernandez (2013) found that providing specific training around issues of homosexuality to principal preparation candidates assisted them in disentangling prior views on homosexuality from attitudes that helped school leaders consider these issues analytically.

The impact of LGBTQIA+ representation can be concluded to have had little but significant effects on participants' overall perceptions of the LGBTQIA+ community. Although the results showed that they were able to gain understanding, knowledge, and empathy through the media they consumed, it had little effect on participants' perceptions of the LGBTQIA+ community because they relied more on what they observed from their peers' experiences as members of the community (Coro, Gaspi, & Navarro, 2020).

4.0 Conclusion

The findings indicate that the identity politics of LGBTQIA+ served useful and empowering purposes for the LGBTQIA+ community in administrative leadership, even while it sometimes contradicted the philosophical complexity of any claim to a shared experience or common group characteristics. It centers on the lived experiences of those LGBTQIA+ school heads facing systemic oppression in identifying themselves as part of this community; thus, it concludes that among the participants, it was found that despite varied views on LGBTQIA+ leaders, they are accepted and respected in their respective institutions. The common struggles that LGBTQIA+ members face in navigating the balance between personal identity and professional responsibilities are stigma, bias, and discrimination. Thus, despite the existence of different policies released, the right of LGBTQIA individuals to express their preferred sexual orientation remained denied. LGBTQIA+ school heads representation fosters an inclusive environment where individuals of different genders can collaborate effectively and promote a safe and supportive atmosphere. They can also address issues related to various genders and establish comprehensive anti-discrimination policies, regular training on LGBTQIA+ inclusivity for staff, and designated safe spaces and support groups. Lastly, they can serve as role models for LGBTQIA+ individuals and others, inspiring them to aim higher and work towards changing societal perceptions of others by serving as a visible role model who values and listens to everyone, especially those who are marginalized and members of the minority. In the private school setting, many recommendations are formulated based on the participants' responses. Though there are already existing policies on gender responsiveness, there is still room for modification to set clearer, more inclusive, and more comprehensive policies. School leaders can make school safe and inclusive

for all. Learning institutions can, therefore, foster an effective and responsive school culture for lesbian, gay, bisexual, and transgender (LGBT) educators in their workplace.

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The author has no conflict of interest to declare relevant to this article's content.

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The Emergence of Service Robots at Selected Quick Service Restaurants: Impact on Customer Experience and Satisfaction

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Abstract. This study investigates the impact of e-service quality, such as reliability, responsiveness, assurance, perceived risk, enjoyment, and speed of service, on customer experience and satisfaction at selected quick-service restaurants that use service robots. Respondents of the study were 181 patrons/diners at selected quick-service food establishments using automation and robots in their operations. Spearman rho, weighted mean, and frequency and percentage data analysis were employed. The study's findings revealed that customers find the usage of service robots and automation reliable, with a 4.56 mean score and the speed of service (4.45) as the two highest E-SERVQUAL dimensions. The study reveals that the six E-SERVQUAL dimensions strongly correlate with customer experience and satisfaction. The same conclusion was revealed regarding a strong positive relationship between customer experience and satisfaction. Thus, the association has a unidirectional relationship. Customers reported higher satisfaction levels when services were prompt, responsive, accurate, and risk-free, and the overall experience was enjoyable. The study adds to the theoretical enrichment of the literature about the impact of e-service quality on customer experience and satisfaction in the context of restaurants in the Philippines. Future research directions may use AI and service robots in people management strategies in the hospitality sector.

Keywords: Customer experience; Customer satisfaction; E-SERVQUAL; Quick service restaurant; Service robots

1.0 Introduction

In this globalization period, most businesses are now transitioning to adopting innovative technologies brought about by the Industrial Revolution. Technology integration in various industries has led to the emergence of service robots in the restaurant sector. These robots are designed to assist with taking orders, delivering food, and providing customer service. Adopting service robots may indicate a lack of interpersonal interactions and decreased perceived virus transmission risk, boosting visitors' intent to visit (Wan et al., 2020). Automating tasks and duties that restaurant workers would typically do is what restaurant robots entail. Researchers and business professionals have been paying greater attention to the usage of service robots in recent years as technology has advanced (Jang & Lee, 2020). The possibility of replacing workers in frontline service professions with robots has given rise to justification from both supporters and opponents (Kim et al., 2021). For instance, in the hotel industry, the widespread adoption of automation was significantly influenced by the COVID-19 pandemic. The pandemic has made customers more risk-averse, which has increased the usage of service robots in the hotel sector. Due to

safety concerns, customers prefer hotels with robot personnel more than human workers (Kim et al., 2021; Shin & Kang, 2020). According to projections made by Technavio in 2020, cited by Choi and Chan (2021), the market for service robots in the hospitality and healthcare industries will increase by 942 million USD between 2020 and 2024.

Automation in restaurants is not intended to replace people; rather, it is intended to improve customer satisfaction and enhance customer experience. Robots with artificial intelligence (AI) are expected to replace or supplement services currently rendered by humans in various industries, including hospitality and tourism (Song et al., 2022; Yoganathan et al., 2021). The research found that relative to service quality delivery, consumers are more likely to expect better service quality provided by human-like service robots (Christou et al., 2020; Lin & Mattila, 2021; Qiu et al., 2020; Yoganathan et al., 2021). In particular, robots could not imitate personalized care (Ariffin, 2013), human connection (Kattara & El-Said, 2013), quality of service (Choi et al., 2020), genuine connections (Shin & Jeong, 2020), and encounter enrichment (Chan & Tung, 2019) that humans added to their service delivery. Thus, the study aims to prove the service quality theory (SERVQUAL model by Parasuraman et al., 1985) using the latest hierarchical model called e-service quality, proposed in 2005 by Parasuraman and Zeithaml, in examining the impact of service robots on customer experience and satisfaction. Still, there are differing viewpoints regarding the impact of a service robot's look on the customer experience. According to Yrjola et al. (2019), customer experience is the total experience created through interactions with service providers.

A research gap is considered based on numerous research studies that have already been conducted on robotics in restaurants, most of which have been conducted in European and Asian nations. Still, given the country's unique sociocultural context and population, understanding how such technological breakthroughs affect customer perception in the Philippines is not present. Thus, Filipino consumers differ from others due to differences in culture and the availability of disposable income. This study will close the knowledge gap on Filipino consumers' perceptions of the employment of robotics in the restaurant sector and whether or not this will ultimately result in a new dining experience and satisfaction. Therefore, with the emergence of service robots in the restaurant sector, the study aims to explore the impact of service robots on customer experience and satisfaction in selected Quick Service Restaurants (QSR) in Taguig City. It will identify the significant relationships among e-service quality, customer experience, customer satisfaction, and the relationship between customer experience and customer satisfaction. This research will provide valuable insights into the impact of service robots, helping restaurant owners and managers make informed decisions about their implementation. By understanding the factors influencing customer perception and acceptance, the industry can adapt and optimize the use of service robots to enhance the overall dining experience. It is further expected to reveal improvements in the e-service quality dimensions of quick-service restaurants.

2.0 Methodology

2.1 Research Design

The study used a descriptive-correlational research design to gather data on the respondents' profiles, the assessment of e-services quality, customer experience, and satisfaction in QSR using service robots in Taguig City. The researchers employed the correlational approach to investigate the link between the independent and dependent variables. According to Bhandari (2022), a correlational study examines the correlations between variables without allowing the researchers to change or exert any control over them. A quantitative approach would ensure the data's objectivity, leading to more precise results.

2.2 Research Respondents

The respondents of this study were customers who visited and dined in the selected QSR, namely Jollibee, McDonald's, and Genki Shushi in Taguig City, Philippines. However, respondents who visited quick service restaurants other than these pre-identified locales were included unless the restaurants used automation and robotics. The study's respondents were those 18 years old and above, of any gender, and those who had consented to answering the survey until reaching the desired sample requirement. The study used convenience sampling to obtain respondents' data. Convenience sampling was employed as the primary method for participant selection. This approach involved choosing individuals who were readily available and accessible, allowing the researchers to efficiently gather data without the need for extensive random sampling techniques. By relying on this method, the study aimed to obtain a preliminary understanding of the phenomenon in question, although this may limit the generalizability of the findings. Convenience can occasionally be a valuable and practical strategy that can

yield insightful data from the community (Showkat & Parveen, 2017). The study targeted 181 customers from the available population among the participating QSRs, totaling 4,400 population-based. The results of the distribution: The majority of the respondents in Taguig City were from McDonald's, with 75 or 41.4%; 71 or 39.2% dined at Jollibee; 33 or 18.2% visited Genki Sushi; while others 1 or 0.6% went to Wendy's and BonChon respectively. The most visited restaurant is McDonald's, and the least visited are Wendy's and BonChon. This finding revealed that robotics and AI-capable systems increase in restaurants because they provide a convenient, easy-to-use option for customers who order food without employee assistance.

2.3 Research Instrument

The questions in the questionnaire were adapted from various literature and studies on the topic under investigation. E-Service quality is anchored from the SERVQUAL and E-SERVQUAL models of Parasuraman et al. (1988) and Mason et al. (2021) that comprised Reliability, Responsiveness, and Assurance (De Kernevenoael et al., 2020; Ivanov et al., 2018), Perceived risk (Jang & Lee, 2020), Enjoyment (Cha, 2020; Park & Kwon, 2016), speed of service (El-Said & Al Hajri, 2022), customer experience (De Kervenoael et al., 2020; Ivanov et al., 2018; Nair, 2016) and customer satisfaction (Khadka & Maharjan, 2017). The researchers included additional indicators as supplemental items to fit the instrument in the study correctly and adequately, as suggested by validators. The researchers asked permission from the original authors to use the tools electronically, and the researchers received positive responses from the authors. The 27-item survey questionnaire used a five-point Likert scale to indicate the level of agreement with the statements, with one (1) as the lowest and five (5) as the highest rating. The instrument validity and internal consistency reveal a 0.966 Cronbach's Alpha value.

2.4 Data-Gathering Procedure

The researchers obtained authorization from the QSR in Taguig City to gather data, and the major tool utilized was a survey questionnaire. Before taking the survey, each customer was given an informed consent form. The researchers used a modified questionnaire after the validation process as a guide with a set of questions to analyze information on relevant variables in a predetermined and systematic way. This activity sought to elicit the respondents' perspectives about their dining experience and satisfaction with service robots in selected QSRs. The surveys were individually distributed and collected by the researchers.

2.5 Data Analysis.

The data sets were analyzed using frequency, percentage, weighted mean, and standard deviation. However, the researchers utilized the Spearman rho test in correlational analysis, a non-parametric tool due to deviation from the data normality that falls under the correlation and regression categories. The p-values provided by SPSS (quoted under Sig. for Kolmogorov-Smirnov and Shapiro-Wilk) revealed 0.000 (reported as $p < 0.000$). The researchers had significant evidence that the assumption for normality of data has been violated, meaning the data are not normally distributed. Thus, non-parametric tests were appropriate (Green & Salkind, 2014).

2.6 Ethical Considerations

The study followed all ethical requirements for data collection, including adhering to Republic Act 10173 of the Philippines to comply with the Data Privacy Act 2012. No respondents were coerced into the data collection, and anonymity and confidentiality were ensured.

3.0 Results and Discussion

3.1 Profile of the Respondents

Table 1 revealed that the majority of the respondents in terms of age were 18 - 28 years old, with 156 respondents or 86.2% equivalent; 29 - 39 years old to 9.9% or 18 54, followed by 41 - 50 years old with the equivalent of 2.8% or 5; and lastly those with an age range from 51 above equivalent to 1.1% or 2. The finding implies that most age groups are young adults fond of eating at quick-service restaurants. Regarding sex, the results show that 93 out of 181 respondents are male, 51.4%, while females have 88 respondents, with 48.6%. This finding did not have much bearing, having a slight edge of male over female. The reason for this finding is that during the data collection, more males answered the questionnaire. The researchers believe another period will eventually change the results, wherein females dominate males, especially on weekends. In the occupation dimension, most respondents were employed, equivalent to 53.6% or 97. followed by students with an equivalent of 41.45% or 75; and lastly. Unemployed respondents with the equivalent of 5% or 9. The result is evident from the questionnaire

distribution, wherein the QSR in Taguig has been dominated by employed individuals working nearby and making the mall their relaxation space. Most respondents' monthly income is less than Php 20,000, with a percentage of 42.5%. This includes the student who categorized their allowances as income, followed by Php 40,000 to Php 49,000 with 30.4% and next is Php 30,000 to Php 39,000 with 14.4% and followed by Php 20,000 to Php 29,000 with 9.4% and lastly above Php 50,000 income with 3.3%.

Table 1. *Demographic profile of respondents*

Age	Frequency	Percentage
18 – 28 year old	156	86.2%
29 – 39 year old	18	9.90%
40 – 50-year-old	5	2.80%
51 – up	2	1.10%
Sex		
Male	93	51.4%
Female	88	48.6%
Occupation		
Employed	97	53.6%
Unemployed	9	5.00%
Student	75	41.4%
Monthly Income		
Less than Php20,000	77	42.5%
Php20,000 - Php29,999	17	9.40%
Php30,000 - Php39,999	26	14.4%
Php40,000 - Php49,999	55	30.4%
Php50,000 above	6	3.30%

3.2 E-Service Quality Dimensions, Customer Experience and Satisfaction

Six E-Service Quality Dimensions

Customers rated the six e-service quality dimensions of using service robots positively. As shown in Table 2, customers rate the E-service reliability quality with an overall mean of 4.56 and interpreted it as “strongly agree” using AI and service robots in selected quick service restaurants as the highest among the six E-service quality dimensions. In explaining this result, it is evident that consumers believe that robots help improve the productivity of restaurants by serving food with contactless actual orders. In addition, customers are aware of the possible reduction of restaurant costs due to automation, like a workforce cutback. Service robots' abilities have gradually exceeded human service providers' performance in certain areas, e.g., memory, computing power, physical strength, and handling unpleasant or dangerous tasks. However, those service robots have a limited level of AI to provide various services. AI can be classified into four categories: mechanical, analytical, intuitive, and empathetic (Huang & Rust, 2018; Laowattana, 2020). The revolution of AI has enabled service robots to offer services with greater productivity, efficacy, and efficiency (Wirtz et al., 2018).

Table 2. *Mean scores of ESERVQUAL dimensions*

E-Service Quality Dimensions	Mean	Std. Dev	Interpretation
1. Reliability	4.56	0.72	Strongly Agree
2. Responsiveness	4.40	0.86	Strongly Agree
3. Assurance	4.42	0.85	Strongly Agree
4. Perceived Risk	4.40	0.86	Strongly Agree
5. Enjoyment	4.36	0.88	Strongly Agree
6. Speed of Service	4.45	0.82	Strongly Agree

The lowest rating among the six e-service quality dimensions is enjoyment, with an overall mean of 4.36. However, despite the low mean score, it is interpreted as a “Strongly Agree” rating, which suggests that customers are confident that the service robots delight customers by providing care and personal attention. The results show a parallel, as argued in past research: if consumers do not enjoy or intend to use service robots, the cost savings and bottom-line benefits will remain untapped (Allmendinger & Lombreglia, 2005), and extant research offers few insights into the drivers of trust in service robots. All the six E-service quality dimensions were rated “strongly agree.” The findings likewise discovered that dependability and responsiveness were the most influential factors influencing user satisfaction with service robots. This emphasizes the significance of ensuring that service robots are reliable and responsive to user requirements to increase user satisfaction, according to Chang et al. (2021). The finding was supported by the literature, arguing that service robots can alleviate the workload of first responders while keeping customers safe from risk, perform tasks so that humans can practice social distancing, execute

delicate procedures that not many staff have the skills or stamina to perform (Matthews, 2020). According to the study of Stranjancevic and Bulatovic (2015), speed of service is being able to provide faster service without reducing quality, which translates to happier customers and additional revenue for the restaurant. Today, robotic service has been integrated into service organizations to enhance customer experience (Prentice & Nguyen, 2020).

Customer Experience and Customer Satisfaction

Both constructs were rated excellent, with 4.54 and 4.48, respectively (see Table 3). The results imply that customers are impressed that service robot delivery can perform its job professionally and sufficiently. Due to the infancy of its implementation, customers or diners are still curious about the technology's usage. Customer expectations, experiences, and technological capabilities influence social robots' ability to provide services (Chiang & Trimi, 2020).

Table 3. Mean scores of customer experience and satisfaction

Constructs	Mean	Std. Dev	Interpretation
Customer Experience	4.54	0.72	Excellent Experience
Customer Satisfaction	4.48	0.81	Extremely Satisfied

Further, a category of customer experience as a user is described as engagement, which has been shown to impact behavioral intention directly (Anzalone et al., 2015). The ability of service robots to perform their job is fulfilling and pleasing to the customers, and they enjoy the technology while dining in the restaurant. The study's findings are consistent with other research (Sivadas & Jindal, 2017; Jalilvand et al. (2017); Adam et al. (2015); Lockyer, 2003) showing a relationship between fast-food restaurant customer satisfaction, word-of-mouth, and restaurant service quality.

3.3 Relationship between E-Servqual and Customer Experience

Table 4 shows a positive correlation between ESERVQUAL and customer experience ($r=0.798$, $p < 0.05$). In detail, the independent variables that displayed the hierarchy of the most substantial predictive effect include enjoyment ($r=0.807$), reliability ($r=0.793$), perceived risk ($r=0.786$), speed of service ($r=0.782$), assurance ($r=0.779$), responsiveness (0.732) respectively.

Table 4. Relationship between E-SERVQUAL and Customer Experience

		ESERVQUAL	Customer Experience
ESERVQUAL	Correlation Coefficient	1	.798**
	Sig. (2-tailed)		0.00
Customer Experience	Correlation Coefficient	.798**	1
	Sig. (2-tailed)	0.00	

** . Correlation is significant at the 0.01 level (2-tailed).

The predictive enjoyment of customers in using the technology gives pleasure and happiness among users of the technology robotics. Likewise, restaurants, also called automated restaurants, make the food industry safer, more personalized, and more efficient. Service robots help improve the speed of service and order accuracy. The reliability dimensions provide solutions to the problems that restaurants are facing today. Not only does this make running the kitchen easy, but now staff can focus on the quality of the food, brand identity, and, of course, providing a top-tier customer experience, especially after the COVID-19 experience. The acceleration of robots and AI in the restaurant industry is inescapable, and this technology will be critical in moving the restaurant industry forward. However, restaurants should remember that customers will still seek human-to-human interaction when dining—as seen recently with the evolution of QR codes as customers returned to on-premises dining—so there will be a need to find a healthy balance between tech and humans. Restaurants will keep developing artificial intelligence despite the dangers involved with its usage because they think the advantages outweigh the disadvantages.

This finding corroborates Chen et al. (2021) in examining customers' experiences with contactless hospitality services in Taiwan's intelligent hotels. Similarly, Ho et al. (2020) focused their research on the impact of service robots on customer service experience/encounter evaluations, perceived value and perceived responsibility for outcomes in which the factors affecting perception and customer assessment include service recovery source (Choi et al., 2019b), perceived usefulness, perceived ease of use, service assurance, personal engagement, tangibles (de

Kervenoael et al., 2020), the role of frontline service robots, perceived innovativeness, perceived ethical and societal reputation (McLeay et al., 2021), technological autonomy and perceived behavioral control (Jörling et al., 2019). Using robots can alter the type and format of products, service design, delivery (Mozafari et al., 2022), and the ensuing consumer experiences (Prentice & Nguyen, 2020). Service robots introduce new interactions between customers, staff, and technology (Qiu et al., 2020).

3.4 Relationship between E-Service Quality and Customer Satisfaction

Table 5 depicts that the E-SERVQUAL dimensions positively correlate with customer satisfaction ($r=0.876$, $p<0.05$).

Table 5. Relationship between E-SERVQUAL and Customer Satisfaction

		ESERVQUAL	Customer Satisfaction
ESERVQUAL	Correlation Coefficient	1	.876**
	Sig. (2-tailed)		0.00
Customer Satisfaction	Correlation Coefficient	.876**	1
	Sig. (2-tailed)	0.00	

** . Correlation is significant at the 0.01 level (2-tailed).

On the variability of the dependent variable, the independent variables that displayed the hierarchy of the most substantial predictive effect include reliability ($r=0.851$), speed of service ($r=0.850$), assurance ($r=0.847$), enjoyment ($r=0.834$), perceived risk ($r=0.807$), responsiveness ($r=0.785$). This positive predictive effect of the variable indicates that customers are more satisfied to dine in the establishment with regards to the reliability of the service robots, the speed and accuracy of service delivery, assurance in providing the products, enjoying the usage of technology, and the risk of the possible transfer of infectious diseases will be eliminated, though of course despite that responsiveness likewise posted a significant finding. The customer still wants personal interaction and building emotional attachment among human service staff. This connotation indicates that for these E-service quality dimensions, the more the quick service restaurants emphasize the attention to detail in using service robots according to the customer, the higher the satisfaction.

Therefore, the result emphasizes that the management should consider the predictive effect of the above six (6) variables for a food establishment to be competitive in satisfying its customers. The result implied combining the modified service quality dimensions, singly or combined, would predict customer satisfaction. The study of Nguyen et al. (2018) supports the importance of service quality in Jollibee restaurants in the Philippines and found that tangibles, reliability, responsiveness, assurance, and empathy significantly positively affected customer satisfaction. Mensah and Mensah (2018) did a similar study on the impact of customer satisfaction and service quality on restaurant repurchase intentions. The study discovered a strong positive association between customer happiness and service quality. In addition, Qin and Prybutok (2009) proposed that consumer happiness in fast-food establishments is directly and favorably correlated with service quality. Customers were happier when services were rapid, responsive, sympathetic, and accurate, and the business looked nice overall. On the other hand, implications for findings reveal that restaurants are also evaluating how AI can help overcome critical issues with staffing, scheduling, and developing human resources, which are also essential in restaurant operations, wherein automation and AI can provide advantages.

3.5 Customer Experience and Customer Satisfaction

Table 6 shows a strong positive correlation between customer satisfaction and experience ($r=0.849$, $p<0.05$).

Table 6. Relationship between Customer Experience and Customer Satisfaction

		Customer Experience	Customer Satisfaction
Customer Experience	Correlation Coefficient	1	.849**
	Sig. (2-tailed)		0.00
Customer Satisfaction	Correlation Coefficient	.849**	1
	Sig. (2-tailed)	0.00	

** . Correlation is significant at the 0.01 level (2-tailed).

The link between service quality delivery, customer experience, and customer satisfaction is better understood due to these findings. Therefore, restaurant establishments are urged to prioritize improving the customer experience by managing customer issues and providing error-free, rapid service. They ensure their service robots are simple to use, operate as intended, and attend to service demands and specifications. Therefore, establishments

must raise customer satisfaction by exceeding their expectations, delighting them, and strengthening their relationship with them via dependable customer service. Based on previous studies, customers' experiences result from a favorable post-experience assessment of such experiences compared to the customers' pre-experience expectations (Gahler et al., 2019). According to this study, providing excellent customer service is inherently linked to improving customer experience. On the other hand, customer satisfaction is a standard performance metric and results from factors related to the gap between customers' expectations and their experience (Ban & Jun, 2019; Milner & Furnham, 2017). Furthermore, in the services marketing literature, despite the call for enhancing customer experience to increase customer loyalty (Ban & Jun 2019; Shourov et al., 2018; Tao & Kim, 2019), it is necessary to include other variables to reinforce this relationship further.

4.0 Conclusion

The study revealed several critical research gaps about how and to what degree service robots could radically improve customer experience and satisfaction. Service robots have grown increasingly widespread in the service industry. They are predicted to develop tremendously in the next few years, but empirical research on the service quality of robots is scarce. Thus, the study aims to explore the impact of service robots using E-service quality theory on customer experience and satisfaction in selected quick-service restaurants. This study found that most respondents were millennials and Z generations. Reliability, speed of service, and assurance were among the E-Service Quality dimensions that presented excellent customer satisfaction and experience upon dining in the selected QSR using AI and service robots. Service robots and artificial intelligence, exemplified by automated kiosks, significantly enhance how clients engage with businesses. These cutting-edge technologies introduce innovative features that foster interactive and enjoyable user experiences. With their user-friendly interfaces, designed to be intuitive and accessible, these systems streamline processes and simplify interactions, allowing customers to effortlessly access a wealth of information and services at their fingertips. By seamlessly integrating these advanced technologies into their operations, businesses can craft a customer journey that is not only more engaging but also remarkably efficient, paving the way for increased satisfaction and loyalty. Statistical findings exposed that e-servqual dimensions have a significantly strong positive relationship with customer experience and satisfaction. Moreover, the same conclusion of a strong positive relationship between customer experience and satisfaction was revealed as having a strong positive correlation. Thus, the association has a unidirectional relationship. Customers reported higher satisfaction levels when services were prompt, responsive, accurate, and risk-free, and the overall experience was enjoyable. The higher the service quality, the increase in customer experience and satisfaction.

Most previous research on service robots in hospitality has concentrated on the hotel business, such as concierge or delivery robots, with little from the restaurant sector. Theoretically, this research adds to the body of knowledge on technology advancements in the hospitality industry by examining changes in service management and marketing brought about by using service robots. Based on the findings, adding to the literature about the potential development of a recommended service process design using AI and robotics is crucial. For managerial implication, restaurant businesses should enhance customer service relationships and surpass customers' dining experience by effectively handling service robots and AI issues, providing prompt customer service, ensuring their technologies are simple to use, meeting service needs and requirements, and offering error-free services to increase customer satisfaction. In addition, QSRs should decide which combination of robot design, customer features, and service design characteristics such as human-likeness (e.g., face, voice, and movement) leads to a better implementation of service robots and AI in the restaurant sector. The study assured the restaurant industry that robots will not steal employment from workers, but they will undoubtedly affect how people work. Food service firms should embrace change since the duties that robots can take over from human workers are dull prescribed tasks with preset outcomes in which human workers' productivity is poor.

The study's modest sample sizes limit the study since they hinder generalizability aside from using cross-sectional surveys. Future research should analyze a broader sample of respondents with different restaurant classifications, as the current study used quick service and fast-casual restaurants. Future studies should focus on respondents using robot services at various restaurants and use longitudinal research. The study was conducted in only one city in Metro Manila, Philippines, and it is difficult to apply the results to other provinces or regions within the Southeast Asian context. The study supports future research on including AI and service robots in people management strategies in the hospitality sector.

5.0 Contributions of Authors

Each author made significant and equal contributions to every aspect of the study, demonstrating a collaborative and comprehensive approach. All authors meticulously reviewed and approved the final work, ensuring its accuracy and integrity.

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7.0 Conflict of Interests

The authors affirm that they have no conflict of interest that could influence the publication of this paper.

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Air Hand Dryers: A Potential Cause of Bacterial Contamination in Stand-Alone Fast-Food Restaurants

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Abstract. Using electrical air hand dryers in public spaces, including fast-food restaurants, may pose public health risks due to bacterial deposition. This study investigates the bacterial contamination caused by air hand dryers in wash areas and comfort rooms of freestanding fast-food restaurants. Using a descriptive-comparative approach, Petri dishes were exposed to air hand dryers for 30 seconds, incubated, and analyzed for bacterial growth. Six bacterial species were identified, with more diverse bacteria and higher deposition levels observed in wash areas compared to comfort rooms. This finding highlights the increased public health risks associated with air hand dryers in wash areas of fast-food establishments. It suggests the need for safer hand-drying alternatives in such settings.

Keywords: Air hand dryers; Bacteria deposition; Public health; Fast-food restaurants; Wash areas.

1.0 Introduction

Restaurants are vital in fostering communities' financial and social well-being (Feldman, 2015). Beyond their economic impact, restaurants serve as venues for convenience, enjoyment, and socialization, often attracting patrons seeking affordable and accessible dining experiences (Crinklaw, 2019). A survey by Vixxo (2019) revealed that 62% of Americans prefer dining in restaurants, compared to 34% who opt for takeout or delivery. On average, most restaurants serve 200 to 400 customers daily, with high-end establishments accommodating upwards of 1,000 patrons (Beck, 2022). Similarly, in the Philippines, nearly 46% of Filipinos dine in fast-food restaurants one to three times per week, highlighting this industry's cultural and economic prominence (The Most Popular Fast-Food Chains in the Philippines, 2020).

Given the significant risks of foodborne illnesses stemming from bacterial contamination, cleanliness, hygiene, and sanitation are pivotal factors in the restaurant industry (Klein, 2021). In the wake of the COVID-19 pandemic, public concern for hygiene, particularly in shared spaces such as public washrooms, has intensified (Donchak, 2020). While effective handwashing protocols—including wetting, lathering, scrubbing, rinsing, and drying—have been well-documented (Alharbi et al., 2015; CDC, 2021), proper hand drying remains underemphasized. Moist hands, which can harbor up to 1,000 times more bacteria than dry hands, significantly increase the risk of bacterial transmission (Lean, 2022; Huang et al., 2012). Wet hands also facilitate bacterial survival and spread from contaminated surfaces (Snelling et al., 2011).

The technological shift toward air hand dryers over paper towels in public and commercial spaces has been framed as an eco-friendly and cost-effective measure (Smith, 2018). However, emerging evidence challenges the safety of air hand dryers. Studies suggest that rather than mitigating bacterial contamination, these devices may exacerbate the problem by dispersing airborne microorganisms onto users' hands (Ross, 2018). Research by the University of Connecticut and Quinnipiac University found that hot-air hand dryers can deposit bacteria onto freshly washed hands, raising concerns about their efficacy compared to paper towels (Huang et al., 2012).

Despite these findings, the role of proper hand drying in infection control remains underrecognized, and misconceptions about the safety and effectiveness of air hand dryers persist. This oversight is concerning, as inadequate hand drying could negate the benefits of proper handwashing practices, particularly in high-risk settings like food service establishments. Although studies have highlighted the risks associated with air hand dryers, research gaps remain, particularly in comparing bacterial deposition across different settings, such as public wash areas versus private restrooms.

This study addresses these gaps by assessing bacterial deposition associated with air hand dryers in freestanding fast-food restaurants. This research aims to contribute to the growing body of evidence on hand hygiene practices by focusing on bacterial contamination in varied restroom environments. The findings are expected to inform restaurant hygiene protocols and public health guidelines, emphasizing the critical role of hand drying in preventing bacterial transmission and enhancing infection control measures.

2.0 Methodology

2.1 Research Design

This study used a quantitative descriptive-comparative research design, which involves gathering and comparing quantifiable and systemic data for the analysis. The researchers assessed the bacterial deposition of the air hand dryers utilized in the public wash areas and the comfort rooms of freestanding fast-food restaurants in Tacloban City. Bacterial colonies recovered were also identified.

2.2 Research Locale

Air hand dryers in public wash areas and comfort rooms of selected stand-alone fast-food restaurants in Tacloban City coded as fast-food A, B, C, D, and E were the target areas of this study. Convenience sampling was used to select the locale for this study. Through convenience sampling, the researchers could target five (5) freestanding Fast-food restaurants where the researchers conducted the study. The researchers opted for this type of sampling for only a limited number of stand-alone fast-food restaurants that were allowed to sample the hand dryers in their establishments.

2.3 Specimen Collection Procedure

Air hand dryers from public wash areas and fast-food A, B, C, D, and E comfort rooms assess bacterial deposition. Petri dishes with nutrient agar (NA) medium were exposed to the running air hand dryers 10 cm from the nozzle (Dawson et al., 2016) for 30 seconds (Kouadri, 2020). A nutrient agar medium will be appropriate for an open plate because it sustains the growth of a wide variety of bacterial species (Aryal, 2022). Furthermore, according to the study of Huesca-Espitia et al. (2018) and Alharbi et al. (2016), 30 seconds is the average time a person uses an air hand dryer to dry their hands. Mohammed (2021) also claimed that, on average, people place their hands 10cm away from the nozzle of air hand dryers when drying their hands. Agars were immediately covered, placed in a ziplock, and transported to the RTRMF laboratory using a disinfected plastic container. The NA plates were then incubated at 37°C for 24 hours.

2.4 Data Processing and Analysis

After incubating the NA plates, each bacterial colony on each plate was counted and evaluated according to their macroscopic morphology. Using a magnifying lens, the grown colonies were differentiated according to their margin, color, elevation, texture, shape, and size. Each unique colony was considered a distinct bacterial species. Hence, only a representative of the considered distinct bacterial species was tested for further bacterial identification.

Differential Staining (Gram Staining)

After identifying the isolates macro-morphologically, a bacterial smear was made from a representative of each type of colony identified on each NA plate.

- a. A clean glass slide was passed over the flame 3-4 times, then laid on the table with the flamed side up to cool.
- b. A drop of NSS was placed on the slide.
- c. The inoculating loop was flame sterilized and then allowed to cool.
- d. Using the flamed sterilized loop, the selected bacterial colony was lightly touched and emulsified in the drop of NSS on the slide to make a smear.
- e. The smear was air dried, and heat was fixed by passing the underside of the smear over the flame 3 - 4 times. The smear was then let cool.

The smears were stained using the Gram staining method to differentiate the chemical and physical properties of the bacterial cell wall, the presence of spores, and their microscopic evaluation.

Biochemical Testing

After assessing the isolates through gram staining, biochemical tests were conducted for further identification based on their reactions and production of enzymes to certain tests. These biochemical tests include:

Catalase Test. This test is used to identify whether the bacteria produce the endoenzyme catalase. In this test, selected colonies from NA were emulsified with one drop of NSS and one drop of 3% H₂O₂. A catalase-positive test is indicated by bubble formation. The considered distinct bacterial species were reinoculated on blood agar plate (BAP), mannitol salt agar plate (MSA), and MacConkey agar plate (MAC) for further evaluation. The plates were then incubated at 37°C for 24 hours. After incubation, the bacterial colonies were evaluated depending on their growth and appearance on each agar. Grown colonies on BAP were evaluated according to the appearance of their hemolytic patterns. Since MSA is a selective media for the differentiation of staphylococci, grown colonies were evaluated according to the color change of the agar. A coagulase test was performed to confirm the differentiation of *Staphylococcus aureus* from the other staphylococci species.

Coagulase Test. This test is used to identify whether the bacteria produce the exoenzyme coagulase. Selected colonies from NA were emulsified in 1 drop of NSS and 1 drop of plasma. The presence of clumping or agglutination indicates a coagulase-positive test. The bacterial fermentation of lactose is being evaluated in MacConkey agar. Lactose-fermenting strains grow red or pink and may be surrounded by a zone of acid-precipitated bile. Lactose non-fermenting strains, such as *Shigella* and *Salmonella*, are colorless and transparent and typically do not alter the appearance of the medium. To further identify the grown colonies from the MAC agar, bacterial cultures were inoculated on Triple Sugar Iron Agar (TSIA) to determine the bacteria's ability to ferment glucose, lactose, and sucrose.

Sugar Fermentation. Using an inoculating needle, the assigned colony is stabbed into the butt of TSIA, and as the needle is removed, it is dragged in a zigzag pattern up the surface of the slant portion of the agar. Tubes were then incubated at 37°C for 24 hours for further identification of the grown colonies on TSIA, Indole test, Methyl red test, Voges-Proskauer test, and Citrate test (IMViC) were conducted. Using a flame-sterilize inoculating loop, grown colonies from TSIA were then inoculated into sulfide indole motility medium (SIM), into 2 MR-VP medium, and into simoun citrate medium.

Indole Test. Using a sterile inoculating needle, the selected colony was stabbed into the medium, and Ehrlich reagent was carefully added. The tube was made to stand for a few minutes. A purple ring in the junction of the medium and the reagent indicates a positive test for indole.

Methyl Red Test. Using a sterile inoculating needle, the selected colony was inoculated into one of the MR-VP mediums, and 10 drops of methyl red were added. The solution was mixed carefully. A positive test is indicated by red color, while a negative test is indicated by yellow color. This test determines if the bacteria produce stable acidic end-products through the mixed acid fermentation pathway.

Voges-Proskauer Test. Using a sterile inoculating needle the selected colony was inoculated into the other MR-VP medium; 1 ml of KOH was added. The solution was mixed thoroughly, and then 10 drops of alpha-naphthol were added drop by drop, shaking it slightly and letting it stand for 15 minutes. A positive test is indicated by red color. This test determines if the bacteria produce acetoin through the butylene glycol pathway.

Citrate Utilization. The selected colony was inoculated into Simoun Citrate medium using a sterile inoculating needle. A positive result is indicated by a change in color from green to blue. This test determines if an organism can grow aerobically using sodium citrate as its sole source of carbon and ammonium phosphate as its sole nitrogen source. For the final confirmation of the bacterial species, the researchers selected distinct bacterial colonies to be tested using the VITEK 2 machine.

2.5 Ethical Consideration

The researchers provided a formal permission letter to each involved stand-alone fast-food restaurant in Tacloban City and only conducted the sample collection with their approval. Strict coding was observed and done to ensure the ethical integrity of the fast-food restaurant involved in the study. The dissemination and communication of the study analysis, results, and discussion shall guarantee the confidentiality of the data and the establishments involved.

3.0 Results and Discussion

3.1 Cultural Characteristics of Bacterial Isolates Recovered

Since each unique colony was considered a distinct bacterial species, the researchers were able to select 18 unique bacterial species to be tested for further bacterial identification. Table 1 summarizes the appearances of the bacterial isolates' cultural characteristics on the respective agars, their gram staining characteristics, and from which restaurants the colonies were recovered.

Table 1. Summary of cultural characteristics of the representative bacterial isolates recovered from nutrient agar plates

Isolates	MAC	BAP	MSA	Gram Stain	Site
1	colorless	Gamma Hemolysis	No Growth	Gram (-) Bacilli	Fast-food E CR
2	colorless	Gamma Hemolysis	Red colonies with red zone	Gram (-) Bacilli	Fast-food E CR
3	No growth	Beta hemolysis	Red colonies with red zone	Gram (+) Bacilli	Fast-food E CR
4	No growth	Gamma Hemolysis	Yellow colonies with yellow zone	Gram (=) cocci in cluster	Fast-food E CR
5	Colorless	Gamma Hemolysis	No Growth	Gram (-) Bacilli	Fast-food C CR
6	No growth	Gamma Hemolysis	Red colonies with red zone	Gram (+) bacilli some with spores	Fast-food C CR
7	No growth	Gamma Hemolysis	Red colonies with red zone	Gram (+) bacilli	Fast-food C CR
8	No growth	Gamma Hemolysis	Red colonies with red zone	Gram (+) bacilli	Fast-food B CR
9	No Growth	Beta Hemolysis	Yellow colonies with yellow zone	Gram (+) cocci in cluster	Fast-food B CR
10	Colorless	Gamma Hemolysis	Red colonies with red zone	Gram (-) bacilli	Fast-food B CR
11	Colorless	Gamma Hemolysis	Red colonies with red zone	Gram (-) bacilli	Fast-food B CR
12	No growth	Gamma Hemolysis	Yellow colonies with yellow zone	Gram (+) bacilli	Fast-food B Wash Area
13	Colorless	Gamma Hemolysis	No Growth	Gram (-) Bacilli	Fast-food B Wash Area
14	No Growth	Gamma Hemolysis	Yellow colonies with yellow zone	Gram (+) bacilli in chain	Fast-food C Wash Area
15	No Growth	Gamma Hemolysis	Yellow colonies with yellow zone	Gram (+) bacilli	Fast-food B Wash Area
16	No Growth	Beta Hemolysis	Yellow colonies with yellow zone	Gram (+) cocci in cluster	Fast-food A Wash Area
17	No Growth	Beta Hemolysis	Yellow colonies with yellow zone	Gra (+) Bacilli in chain with pores	Fast-food A Wash Area
18	Colorless	Gamma Hemolysis	Red colonies with red zone	Gram (+) cocci	Fast-food D Wash Area

It can be observed in Table 1 that on MAC, only isolates 1, 2, 5, 10, 11, and 13 showed growth and appeared colorless, hence identifying them as non-lactose fermenters. In contrast, the remaining isolates did not grow on the said medium. On BAP, isolates 3, 9, 16, and 17 exhibited a Beta hemolytic pattern; the other isolates all showed a Gamma hemolytic pattern, and none were alpha-hemolytic bacteria. The isolates that showed a positive result on MSA are 2, 3, 6, 7, 10, 11, and 18. Isolates 1, 5, and 13 showed no growth on the said medium, and the rest of the colonies showed negative results. Isolates 1, 2, 5, 10, 11, and 13 exhibited as gram-negative bacilli; isolates 3, 6, 7, 8, 12, 14, and 17 exhibited as gram-positive bacilli; and isolates 4, 9, and 18 showed to be gram-positive cocci.

3.2 Biochemical Tests Results

The following tables show the summary of biochemical test results of the representative isolates. As gleaned in Table 2, all isolates were catalase-positive, and only isolates 9 and 16 were coagulase-positive. Isolates that grew on MAC agar (isolate 1, 2, 5, 10, 11, and 13) were further tested for sugar fermentation on TSIA; all isolates showed an Alkaline over Alkaline result indicating the absence of carbohydrate fermentation. The isolates from TSIA were reisolated for further bacterial identification to IMViC media, where isolates 1, 2, 5, 10, 11, 13, and 18 showed

negative results for Indole, Methyl Red, and Voges Proskauer. In Simoun Citrate, only isolate 18 showed a negative result, whereas the other 6 showed a positive result. For the final bacterial species identification, the researchers utilized the VITEK 2 compact machine of the Eastern Visayas Medical Center (EVMC) Laboratory. However, not all 18 isolates were submitted for testing due to financial limitations. Only the isolates the researchers' manual testing cannot confidently identify were sent to be identified by the machine.

Table 2. Summary of the biochemical tests results of the representative bacterial isolates

Isolates	Catalase	Coagulase	TSIA	Indole	Methylred	Voges Proskauer	Simoun Citrate
1	+	-	K/K (-) H ₂ S (-) Gas	-	-		+
2	+	-	K/K (-) H ₂ S (-) Gas	-	-	-	+
3	+	-					
4	+	-					
5	+	-	K/K (-) H ₂ S (-) Gas	-	-	-	+
6	+	-					
7	+	-					
8	+	-					
9	+	+					
10	+	-	K/K (-) H ₂ S (-) Gas	-	-	-	+
11	+	-	K/K (-) H ₂ S (-) Gas	-	-	-	+
12	+	-					
13	+	-	K/K (-) H ₂ S (-) Gas	-	-	-	+
14	+	-					
15	+	-					
16	+	+					
17	+	-					
18	+	-					

3.3 Bacterial Identification

Table 3 reveals the final bacterial species identification of each representative isolate.

Table 3. Final bacterial species identification

Isolate	Species
Isolate 1	<i>Pseudomonas stutzeri</i>
Isolate 2	<i>Acinetobacter baumannii</i>
Isolate 3	<i>Bacillus spp</i>
Isolate 4	<i>Staphylococcus sciuri</i>
Isolate 5	<i>Pseudomonas stutzeri</i>
Isolate 6	<i>Bacillus spp</i>
Isolate 7	<i>Bacillus spp</i>
Isolate 8	<i>Bacillus spp</i>
Isolate 9	<i>Staphylococcus aureus</i>
Isolate 10	<i>Acinetobacter baumannii</i>
Isolate 11	<i>Acinetobacter baumannii</i>
Isolate 12	<i>Bacillus spp</i>
Isolate 13	<i>Pseudomonas stutzeri</i>
Isolate 14	<i>Bacillus spp</i>
Isolate 15	<i>Bacillus spp</i>
Isolate 16	<i>Staphylococcus aureus</i>
Isolate 17	<i>Bacillus spp</i>
Isolate 18	<i>Staphylococcus hominis</i>

Isolate 1, 5, and 13 were confirmed to be *Pseudomonas stutzeri*; Isolate 2, 10, and 11 were confirmed to be *Acinetobacter baumannii*; Isolate 4 was confirmed to be *Staphylococcus sciuri*; Isolate 9 and 16 were confirmed to be *Staphylococcus aureus*; Isolate 18 was confirmed to be *Staphylococcus hominis*; and the rest of the isolates (3, 6, 7, 8, 12, 14, 15, and 17) fall under *Bacillus spp*. Identifying bacterial species in air hand dryers within fast-food restaurant wash areas and comfort rooms suggests these devices may contribute to spreading harmful bacteria, including *Acinetobacter baumannii* and *Staphylococcus aureus*. Instead of promoting hygiene, air hand dryers might

disperse bacteria onto hands and surrounding surfaces, potentially increasing the risk of infection. This highlights the need for improved design, maintenance, and possibly reconsideration of air hand dryers in public restrooms to ensure they do not become vectors for contamination, particularly in high-traffic areas.

3.4 Bacterial Species Distribution

The table below shows the distribution of all bacterial species isolated from the hand dryers in selected standalone fast-food restaurants to summarize where the bacterial species were present. As reflected in Table 4, *Acinetobacter baumannii* was only deposited by the hand dryer in the comfort room of fast-food B. *Bacillus* spp, and *Staphylococcus aureus* present in both wash areas and comfort rooms of all fast-food restaurants, making these species the most isolated bacterial species. *Pseudomonas stutzeri* were found in wash areas of Fast-food A,B,C. *Staphylococcus hominis* were only present in the wash area of Fast-food D. At the same time, *Staphylococcus sciuri* was present only in the wash area of Fast-Food E. Hence, the air hand dryers in wash areas deposited more variety of bacterial species than those inside the comfort rooms.

Table 4. Distribution of bacterial species isolated from air hand dryers in wash areas and comfort rooms

Bacteria	Fast-food A		Fast-food B		Fast-food C		Fast-food D		Fast-food E	
	CR	WA	CR	WA	CR	WA	CR	WA	CR	WA
<i>A. baumannii</i>			+							
<i>Bacillus</i> spp.	+	+	+	+	+	+	+	+	+	+
<i>P. stutzeri</i>		+		+		+				
<i>S. aureus</i>	+	+	+	+	+	+	+	+	+	+
<i>S. hominis</i>								+		
<i>S. sciuri</i>										+

Note: WA - Wash Area; CR - Comfort Room

3.5 Frequency Distribution of Bacterial Colony

Table 5 shows the frequency distribution of bacterial colonies recovered from the comfort rooms among Fast-food restaurants. It is observed that *S. aureus* is the most distributed species, compromising about 77.61% of the overall bacterial colonies. Followed by *Bacillus* spp. with a total of 107 colonies, approximating 21.02% of the overall bacterial colonies. *A. baumannii* only approximated 0.78%, having four colonies. The last species recovered from the samples from the comfort rooms is *P. stutzeri*, having only three colonies and approximating 0.59% - the least commonly distributed bacterial species. Meanwhile, *S. hominis* and *S. sciuri* were not recovered in the samples from the comfort rooms.

Table 5. Frequency distribution of bacterial colonies from the comfort rooms

Species	Frequency	Percentage
<i>Acinetobacter baumannii</i>	4	0.78
<i>Bacillus</i> spp	107	21.0
<i>Pseudomonas stutzeri</i>	3	0.59
<i>Staphylococcus aureus</i>	395	77.6
<i>Staphylococcus hominis</i>	-	
<i>Staphylococcus sciuri</i>	-	

Table 6 shows the frequency distribution of bacterial colonies recovered from the wash areas of the fast-food restaurants. It is observed that *S. aureus* is still the most distributed, compromising about 91% of the overall bacterial colonies. Followed by *Bacillus* spp. with a total of 56 colonies, approximating 7% of the overall bacterial colonies. *S. hominis* colonies totaled 8, which compromised to only 1%. *P. stutzeri* totaled to 5 colonies, approximating to only 0.6%. *S. sciuri* was the least commonly distributed colony, with only one colony recovered – approximating 0.1%. Meanwhile, *A. baumannii* was not recovered in any sample from wash areas of all selected freestanding Fast-food restaurants.

Table 6. Frequency distribution of bacterial colonies from the wash areas

Species	Frequency	Percentage
<i>Acinetobacter baumannii</i>	-	-
<i>Bacillus</i> spp	56	6.96
<i>Pseudomonas stutzeri</i>	5	0.62
<i>Staphylococcus aureus</i>	734	91.2
<i>Staphylococcus hominis</i>	8	0.99
<i>Staphylococcus sciuri</i>	1	0.12

The data indicate a high level of bacterial contamination in fast-food restaurants' comfort rooms and wash areas, with *Staphylococcus aureus* being particularly prevalent. This underscores the need for improved sanitation

practices to reduce bacterial load and minimize the risk of infection. The presence of other potentially harmful bacteria, even in smaller quantities, further highlights the importance of maintaining strict hygiene standards in these public spaces. Future studies might evaluate the effectiveness of different cleaning protocols and explore innovative approaches to disinfect these environments more thoroughly.

Table 7. Frequency distribution of the total bacterial colonies

Species	Frequency	Percentage
<i>Acinetobacter baumannii</i>	4	0.30
<i>Bacillus</i> spp	163	12.0
<i>Pseudomonas stutzeri</i>	8	0.60
<i>Staphylococcus aureus</i>	1129	86.0
<i>Staphylococcus hominis</i>	8	0.60
<i>Staphylococcus sciuri</i>	1	0.10

3.6 Clinical Significance of the Identified Bacterial Species

To provide additional insights, the table below shows the clinical significance of each bacterial species isolated from the air hand dryers of the selected stand-alone fast-food restaurants. It is shown that all the identified bacterial isolates are widely found in the environment.

Table 8. Clinical significance of the bacterial isolates from the air hand dryers

Bacterial Species	Clinical Significance
<i>Acinetobacter baumannii</i>	A ubiquitous gram-negative coccobacillus, which is an opportunistic pathogen and is considered a major cause of nosocomial infections. <i>A. baumannii</i> can cause septicemia, urinary tract infection, pneumonia, and can infiltrate open wounds (Nocera et al., 2021). It is also considered a multi-drug-resistant bacteria (Sasidhar, 2018).
<i>Bacillus</i> spp.	<i>Bacillus</i> spp. are aerobic spore-forming rods that have been known to cause extensive infections such as abscesses, septicemia, endocarditis, meningitis, ophthalmitis, osteomyelitis, peritonitis, and respiratory and urinary tract infections. Most of these manifest as secondary infections affecting immunocompromised hosts. Species often associated with these types of infection are <i>B. cereus</i> , <i>B. licheniformis</i> , and <i>B. subtilis</i> . Meanwhile, <i>B. alvei</i> , <i>B. brevis</i> , <i>B. circulans</i> , <i>B. coagulans</i> , <i>B. macerans</i> , <i>B. pumilus</i> , <i>B. sphaericus</i> , and <i>B. thuringiensis</i> only cause infections occasionally (Turnbull, n.d.).
<i>Pseudomonas stutzeri</i>	A gram-negative bacillus that is widely distributed in the environment. Compared to other <i>Pseudomonas</i> species, <i>P. stutzeri</i> is rarely reported as a causative agent of infective endocarditis. However, it has been reported to be an opportunistic pathogen in humans, causing pneumonia, meningitis, ocular infection, bacteremia, osteomyelitis, and joint infections (Alwazzeah et al., 2020).
<i>Staphylococcus hominis</i>	A gram-positive coagulase-negative cocci occurs as a normal flora on human skin. <i>S. hominis</i> rarely causes endocarditis and has been isolated as a presumed pathogen in skin and soft tissue infection (Uddin et al., 2022).
<i>Staphylococcus sciuri</i>	A gram-positive coagulase-negative cocci isolated from animals, humans, and various food products. <i>S. sciuri</i> is an opportunistic pathogen that is a causative agent of endocarditis, peritonitis, septic shock, urinary tract infection, pelvic inflammatory disease, and wound infections (Naik et al., 2018).

Detection of bacterial species from air hand dryers suggests that these devices act as reservoirs for the accumulation and spread of microorganisms due to regular usage by individuals. This makes all, healthy or unhealthy, symptomatic or asymptomatic, contribute to the distribution of bacteria around the environment, including those that carry pathogenic risks (Suen et al., 2019). The presence of these bacteria is due to several users' activities in wash areas and comfort rooms. For instance, *Staphylococcus aureus* might have spread from shed skin microbiota or could be released from the respiratory tract by coughing and sneezing of people or from discharged sputum (Mohammed, 2021). *Bacillus* spp. was also present, as it could have spread through individuals' soil-contaminated footwear. *Pseudomonas stutzeri* is also present and has most likely spread from wounds, respiratory tract, and urine (Mohammed, 2021). Furthermore, *Staphylococcus hominis* is present and might have spread through the shedding of the skin as it is commonly isolated from human skin (Severn et al., 2022). Since it can be isolated from these, *Staphylococcus sciuri* might have been spread from various food products (Naik et al., 2018). In addition, the presence of *Acinetobacter baumannii* may result from respiratory tract secretions (Kandi et al., 2016). They could also be transmitted from the mucosa of the digestive and urinary tracts of infected or even healthy people, resulting from skin shedding (Mao Chem et al., 2015). All these bacteria circulate in the environment and are picked up by a functioning hand dryer.

In the data gathered, *S. aureus* is the most isolated bacteria and is found to be present in both wash area and comfort room air hand dryers from all selected fast-food restaurants; this is also consistent in the study of Huesca-Espitia et al. (2018) and Pernell et al. (2018). The recovery of bacilli spp in this study was only generalized because the VITEK 2 compact machine does not identify specific species of bacilli. The bacilli spp recovered by the other studies conducted are as follows: *B. subtilis* (Huesca-Espitia et al., 2018), *B. cereus* (Alharbi et al. 2016 and Vardoulakis et al., 2022); Lactobacilli (Wilcox et al. (2014); *B. infantis*, *B. licheniformis*, *B. marisflavi*, *B. megaterium*, *B. pumilus*, *B. simplex* (Vardoulakis et al., 2022). In this study, the recovered species under *Pseudomonas* spp were *P. stutzeri*. Meanwhile, other studies recovered *P. alcaligenes* (Alharbi et al., 2016), *P. aeruginosa* (Kouadri, 2020), and

P. luteola (Huesca-Espitia et al., 2018). The isolation of *Staphylococcus hominis* is also consistent with the study conducted by Huesca-Espitia et al. (2018). Other studies have not recovered *Staphylococcus sciuri* from air hand dryers; this might be because it is more common in settings with livestock (Kengkoom & Ampawong, 2017). The recovery of *Acinetobacter baumannii* from air hand dryers is also consistent with the study of Huesca-Espitia et al. (2018) and Mohammed (2021).

Several factors, such as poor hygiene measures, inadequate ventilation, and warm and wet environment, can allow microorganisms to thrive and survive for a long time on surfaces and items around the area. Rubbish bins placed in the toilet are a potential source of the spread of microorganisms (Mohammed, 2022). Some species that are isolated may be in danger to susceptible individuals. Several factors also affect bacterial distribution from air hand dryers to the hands of the user. These factors include the type of electric dryer, frequent dryer use, exposure period to the blowing air, type of bacterial species, and the number of diffused bacterial cells (Suen et al., 2019). Furthermore, according to the results in the previous tables, hand dryers found in wash areas of fast-food restaurants deposit more variety of bacterial species compared to the hand dryers found inside the comfort rooms. This can be because more people use air hand dryers in wash areas rather than in comfort rooms. Since these air hand dryers are placed in a more open space, it is more convenient for individuals to use the device, and they will no longer need to use or choose hand dryers inside comfort rooms.

4.0 Conclusion

The data gathered revealed that the air hand dryers utilized by selected Fast-food restaurants deposit bacteria, and some may carry pathogenic risks. The data also showed a difference in the distribution of bacteria by air hand dryers in wash areas and comfort rooms. In the final identification, the researchers isolated a total of 6 bacterial species. These species isolated were *Acinetobacter baumannii*, *Bacillus spp.*, *Pseudomonas stutzeri*, *Staphylococcus aureus*, *Staphylococcus hominis*, and *Staphylococcus sciuri*. Hence, it can be concluded from the data gathered from this study that the hand dryers in the wash areas of fast-food restaurants deposit more variety of bacterial species and colonies compared to those inside the comfort rooms. This can be because more people utilize the air hand dryers in the wash area and open spaces in fast-food restaurants.

Staphylococcus aureus is the most isolated bacteria and is found to be present in both wash areas and comfort room air hand dryers from all selected stand-alone fast-food restaurants. *Pseudomonas stutzeri*, on the other hand, is consistently distributed only by air hand dryers in wash areas. Potential human pathogens such as *P. stutzeri* and *A. baumannii* were also isolated. When air hand dryers are used, these microorganisms can be inhaled by people, contaminated, and distributed to the environment. In addition to investigating the types of pathogenic microorganisms dispersed by air dryers, the results of this study increase concerns about hand drying facilities in wash areas and comfort rooms to prevent contamination of washed hands and environments by pathogenic bacteria.

5.0 Contribution of Authors

All authors contributed significantly to this research. Authors 4 and 5 were responsible for the study's conception and design. Authors 1 and 2 conducted the data analysis and interpretation. Authors 3 and 6 played a key role in drafting the manuscript, while Author 1 provided critical revisions and final approval of the version to be published. All authors have read and approved the final manuscript.

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7.0 Conflicts of Interest

The author(s) declare no conflict of interest, financial or non-financial, that could have influenced the research outcomes or the interpretation of the data presented in this study.

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Self-Stigma of Seeking Help as a Predictor of Mental Well-Being Among Filipino College Students

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Abstract. The mental health of Filipino college students is a growing concern due to the challenges posed by academic pressures, social isolation, and emotional distress. Counseling interventions are crucial in addressing these challenges by equipping students with strategies that build resilience and personal agency. However, many students remain hesitant to seek professional help despite its availability due to the self-stigma associated with mental health support. This study addressed a crucial gap in the literature by exploring how stigma predicts mental health outcomes in the Filipino context, offering valuable insights for improving student well-being and academic success. The pervasiveness of mental health concerns among college students and understanding barriers to seeking professional help also present a timely context. This study used a quantitative, predictive correlational design to examine the relationship between self-stigma and mental well-being. G*Power was used to compute the sample size, and a purposive sampling technique was utilized to recruit college students (n=300) across higher education institutions in Pampanga, Philippines. The data was collected through standardized instruments, including the Self-Stigma of Seeking Help Scale and the Short Warwick-Edinburgh Mental Well-Being Scale. The findings revealed a weak and significant negative correlation ($R=-0.17$, $p < 0.001$) between self-stigma and mental well-being, indicating that higher levels of self-stigma are associated with lower levels of mental well-being. Moreover, the data revealed that 2.9% of self-stigma can predict mental well-being among college students. These findings highlighted that as college students experience higher self-stigma around seeking help, mental well-being tends to decrease, making the students less likely to seek psychological support and more vulnerable to mental health challenges. Higher educational institutions are encouraged to create an environment that fosters open discussions on mental health, making it more accepted and normalized. School counselors are encouraged to implement stigma-reduction programs to help students feel more comfortable seeking mental health support without fear of judgment.

Keywords: College students; Counseling; Mental well-being; Seeking help; Self-stigma

1.0 Introduction

Academic pressures, social isolation, emotional distress, and other life stressors challenge the mental well-being of Filipino college students. Empowering students to manage these difficulties through counseling services is vital to building resilience and enhancing their capacity to navigate personal and academic challenges. It is crucial to foster academic success and holistic development by recognizing the factors that hinder or promote mental health among students. Many students remain reluctant to seek professional help despite the availability of counseling services and mental health programs. One major obstacle is self-stigma, which encompasses the internalized negative beliefs and attitudes about seeking help. Self-stigma can discourage individuals from seeking mental

health services, even when such support is desperately needed. This raises a crucial problem: How does the perceived self-stigma of seeking help impact the mental well-being of Filipino college students, and to what extent does the self-stigma of seeking help predict their mental health? According to Sheehan (2021), self-stigma not only deters people from seeking help but also increases psychological distress. Many students hesitate to seek help because of the fear of judgment or misunderstanding. This reluctance can lead to a deterioration of mental well-being and may even strain relationships with close family and friends. Guarneri et al. (2019) indicate that self-stigma instills feelings of shame and reinforces negative self-perceptions, making it one of the most pervasive barriers to addressing mental health issues. Furthermore, Mills et al. (2020) revealed that people with mental health problems often experience self-stigma, which negatively affects psychological well-being. These false beliefs and stereotypes lead to fear, avoidance, and overall discomfort towards people with mental distress who are often seen as unpredictable, impulsive, and dangerous. Therefore, recognizing self-stigma is essential in creating supportive environments where students are encouraged to seek help without fearing judgment or discrimination.

A study by Koutra et al. (2024) found that 77% of university students experienced moderate to severe psychological distress, with a significant number struggling with self-stigma related to seeking mental health support. Similarly, Conceição et al. (2022) discovered that 24% to 37% of college students in need of psychological help avoided seeking assistance due to internalized stigmatization. Dagani et al. (2023) found that self-stigma leads to maladaptive coping strategies, including reduced reliance on instrumental support, such as seeking advice or help, and an increase in self-blame. The self-stigma of seeking help (SSOSH) stands as a critical obstacle for students who may otherwise benefit from mental health services. SSOSH involves internalizing negative societal messages about help-seeking, often portraying it as a sign of weakness or failure. Help-seeking is perceived by some individuals, particularly those from underrepresented groups, as a threat to their identity, further decreasing their likelihood to seek help (Johnson, 2020). AlSamhori et al. (2024) point out that stigma is still a significant attitudinal factor limiting access to mental health services. It was emphasized that stigma closely connects with help-seeking behaviors, significantly influencing students' decision-making processes (McDermott et al., 2017; Punla et al., 2022). Shim et al. (2022) highlighted the potential of psychoeducation to reduce stigma and foster understanding. Educating and training students about mental health issues not only enhances their awareness but also promotes accepting attitudes toward mental health care. Nonetheless, the rates of mental health help-seeking among college students still vary, influenced by factors such as psychological well-being, stigma, and demographic variables such as gender and age. While numerous studies have already examined the prevalence of psychological distress among college students, as well as the influence of self-stigma on help-seeking behaviors, there is still a limited exploration of how Self-Stigma of Seeking Help (SSOSH) is related to mental well-being, particularly within the population of Filipino college students. These existing studies also emphasize the role of stigma as an obstacle to accessing mental health services but fail to investigate its predictive relationship with the mental well-being of students. Moreover, as previously mentioned, interventions like mental health education have shown some effectiveness in reducing stigma. However, there is still insufficient evidence on how it can address the adverse effects of stigma on overall mental health outcomes. This study addresses these gaps by delving into the relationship and predictive role of SSOSH on the mental well-being of Filipino college students. The current study provides insights specific to this demographic. It contributes to developing more targeted mental health education and stigma-reduction programs that promote help-seeking among Filipino college students.

Stigma is an important factor that reduces help-seeking behaviors across different groups. For instance, Li et al. (2020) highlighted the significant relationship between self-stigma and mental health outcomes, stressing the key role of shame as a mediating factor. Likewise, the study by Yap et al. (2017) found that stigma significantly lowers the willingness of youth diagnosed with anxiety and depression to seek mental health support. Similarly, Vidourek et al. (2014) examined college students' views on the benefits and barriers to mental health treatment, discovering that stigma-related attitudes play an essential role in determining their willingness to seek help. Omondi (2024) suggested that future research should explore deeper into how mental health stigma influences help-seeking behaviors. Supporting this, in the context of young adults, Kim et al. (2021) found that higher levels of self-stigma are linked to a more negative attitude toward seeking mental health treatment. Building on these findings, this study determines the relationship and prediction between SSOSH and mental well-being among Filipino college students; this underscores the necessity for comprehensive interventions to address stigma,

involving theoretical advancements, practical strategies, and policy reforms. Proposed methods include contact-based anti-stigma interventions, practitioner training programs, and public awareness campaigns highlighting the importance of mental health care. Practical recommendations include reducing public stigma through media and educational initiatives, addressing self-stigma with cognitive-behavioral therapy and peer support, and enhancing access to care through telehealth services and culturally sensitive practices.

Mills et al. (2020) highlighted that self-stigma could result in reduced self-esteem, diminished self-efficacy, and a sustained negative impact on psychological well-being. While self-help interventions that lower self-stigma have demonstrated the potential to alleviate these adverse effects, the deeply rooted cultural stigma surrounding mental health remains a significant challenge. In the Philippines, Rubio (2023) noted that cultural beliefs associating mental health issues with personal weaknesses or supernatural causes reinforce the idea that mental disorders are socially unacceptable. As a result, individuals frequently turn to family and friends for support rather than seeking professional care. Glinoga et al. (2022) further revealed that self-stigma, along with societal stigma, hinders many Filipino students from seeking help from mental health professionals due to fears of judgment and discrimination. Stigma, confidentiality concerns, and a lack of mental health literacy are barriers to help-seeking. Addressing these challenges requires strategies to reduce stigma, increase awareness, and improve access to confidential mental health support (Yadav, 2023). Hence, effective mental health programs should consider how individuals conceptualize mental health and mental illness since it varies across cultures and contexts (Adebayo et al., 2024). Despite these insightful findings, existing research only focused on the effects of stigma and general interventions, failing to investigate the specific relationship and predictive role of self-stigma of seeking help (SSOSH) on mental well-being, particularly among Filipino college students. This study fills the gap by exploring this relationship and predictive role, calling attention to formulating stigma-reduction programs tailored to the Filipino context.

The Modified Labeling Theory (MLT) provides a valuable framework for understanding how societal stigma surrounding mental illness leads to self-stigmatization, which in turn discourages help-seeking behaviors. According to MLT, people who are aware of negative stereotypes about mental health conditions may internalize these beliefs, even without being directly labeled or stigmatized by others. This internalization creates a deep-seated fear of being judged, misunderstanding, and discrimination, preventing individuals from seeking the professional help they need. The mere anticipation of being labeled as "mentally ill" can cause individuals to avoid mental health services entirely, resulting in isolation and worsening of their mental well-being (Fox & Earnshaw, 2023). It underscores the cyclical nature of self-stigma: the more individuals fear societal labeling, the less likely they are to seek support, prolonging their mental health issues. In the Filipino context, where cultural norms often highly value family reputation and emotional resilience, this fear of being labeled as "mentally ill" can be extreme. Self-stigma poses a significant barrier, perpetuating avoidance behaviors and blocking efforts to promote mental health care. As noted by Onie et al. (2021), the fear of societal judgment and discrimination deters individuals from accessing the help they need, stressing the critical importance of targeted interventions to address stigma and create a more supportive environment for mental health. While existing studies highlight the effects of stigma on help-seeking behaviors, there is still a notable gap in understanding the relationship and prediction between SSOSH and mental well-being, especially among Filipino college students. This study examines how SSOSH influences mental well-being and its predictive role on mental health outcomes among this demographic to fill the gap. By integrating the principles of MLT into counseling practices, Filipino guidance counselors can better understand the complex relationship between societal stigma and self-stigmatization. This understanding capacitates counselors to develop programs that counter negative stereotypes, promote positive attitudes toward help-seeking, and establish safe spaces where students feel supported in prioritizing their mental health. Through this, the study aims to inform policies and practices that reduce self-stigma, encourage help-seeking behaviors, and eventually improve mental health outcomes for Filipino college students.

While several studies have investigated the interplay between self-stigma, help-seeking behaviors, and mental well-being, more research within the Filipino context is still necessary. A significant portion of the existing literature focuses on special populations, such as individuals diagnosed with mental health conditions, resulting in an underrepresentation of the general population of college students. Additionally, while previous studies have focused on general help-seeking behaviors, this investigation concentrates on the self-stigma associated with seeking mental health assistance; this research primarily evaluated the level of perceived self-stigma of seeking

help and its relationship and prediction with mental health among Filipino college students. The research provided valuable insights that can aid school counselors and educators in developing culturally sensitive and evidence-based interventions. These may include stigma-reduction programs and initiatives designed to cultivate a supportive environment for mental health. By addressing self-stigma, the study intends to improve mental well-being among Filipino college students, empowering them to overcome academic and personal challenges.

2.0 Methodology

2.1 Research Design

A quantitative research methodology was employed to explore the relationship between Filipino college students' mental health and the self-stigma of seeking help. Specifically, the researchers utilized predictive correlational design to gauge the association and prediction of the variables. Predictive correlation in behavioral sciences involves examining the association between variables and predicting the outcome variable (Smith et al., 2022). In this research, self-stigma of seeking help served as the predictor, while mental health functioned as the outcome variable.

2.2 Research Locale

The study was conducted in higher education institutions (HEIs) in Pampanga, Philippines. Based on the respondents' declared demographics, 16 HEIs are included in this context. This locale was selected because Pampanga is home to a diverse range of HEIs, providing a representative sample of Filipino college students, which is ideal for this research.

2.3 Research Participants

This study recruited Filipino college students ($n=300$) in several higher education institutions in Pampanga, Philippines. The researchers determined the needed sample size through the G*Power 3.1.9.7. The set parameters are a statistical power of 95%, an effect size of 0.15, and a significance level of 0.05. In this case, there is a 95% chance that the real value is within 5% of the measured value. Moreover, researchers used the convenience sampling technique to recruit the students in the study. The convenience sampling technique is a non-probability sampling method wherein the researchers select participants who are easily accessible (Benites et al., 2023).

2.4 Research Instrument

This study used two open-access instruments to gather all the data needed. The first scale is Self-Stigma of Seeking Help (SSOSH), developed by Vogel et al. (2006), which measures how much participants believed seeking mental health care could impair their self-esteem. The instrument has a 5-point Likert scale ranging from (1) strongly disagree to (5) strongly agree. The scale includes 10 items, with items 2,4,5,7 and 9 reverse-scored to control for response bias. The SSOSH measures participants' agreement and has demonstrated high reliability ($\alpha > 0.86$). This scale has been validated among university students (Larrahondo et al., 2021). The SSOSH quantifies self-stigma, a potential barrier to accessing mental health services, offering valuable insights into how stigma impacts help-seeking behavior and mental well-being among Filipino college students. Permission to the authors is sought to convert this scale into Google Forms. The second scale used is the Short Warwick-Edinburgh Mental Well-being Scale (SWEMWBS) which assesses the positive mental health of the various populations. The 7-item instrument has a 5-point Likert scale ranging from "1 - None of the time" to "5 - All of the time", summed to provide a single score. The SWEMWBS measures the frequency of positive mental health and has established excellent reliability ($\alpha > 0.89$) among the general population (Ng Fat et al., 2017). The scale is scored by first summing the scores for each of the seven items, which are then transformed into metric scores using the SWEMWBS conversion table. Approval from the authors were requested to convert these two scales into a digital format.

2.5 Data Gathering Procedure

The researchers followed ethical standards to ensure all respondents' confidentiality and voluntary participation. The target population included Filipino college students from various higher education institutions in Pampanga, Philippines. The researchers employed a convenience sampling technique to guarantee representation across diverse demographics. First, the researchers engaged with potential participants during their free time, affirming comfort and voluntary participation. After getting verbal consent, the researchers sent the survey link through a messenger application. After obtaining enough responses, the researchers utilized JAMOVI 2.4.14 to clean, code, and analyze the dataset for accurate and reliable results. The analysis followed a systematic approach, starting

with descriptive statistics to summarize key features of the data. The total number of the sample, mean age, levels of mental health, and self-stigma of seeking help were determined through descriptive analysis. Subsequently, researchers performed a correlation analysis using Pearson's correlation test, which revealed a significant negative relationship between self-stigma and mental well-being. The R-value indicated the direction and strength of this relationship. Finally, researchers conducted a regression analysis to determine how self-stigma predicted mental well-being. The coefficient of determination (R^2) provided insights into the proportion of variance in mental well-being that self-stigma explains. In summary, the data-gathering and analysis procedures enabled the researchers to thoroughly examine the relationship between the self-stigma of seeking help and mental well-being among Filipino college students. The analysis set a foundation for understanding how self-stigma predicts students' willingness to seek help and their overall mental health. This offers practical implications for creating targeted interventions in school counseling programs.

2.6 Ethical Considerations

The researchers prioritized safeguarding the rights, dignity, and well-being of all participants throughout the study. Recognizing the sensitive nature of topics such as mental well-being and self-stigma, the researchers ensured that participants encountered no harm or distress during any phase of the research process. Efforts were made to create a safe and supportive environment, allowing participants to engage comfortably and openly. Participants were fully informed about the study's purpose, procedures, and their voluntary involvement. They were free to withdraw from the study at any point without facing any negative consequences. Informed consent was obtained from each participant, confirming they understood their rights to confidentiality and anonymity. In adherence to Republic Act 10173, the Data Privacy Act of 2012, all personal information was handled with strict confidentiality. Sensitive details such as gender, age, and self-stigma experiences were protected, and the collection of identifying information was optional to preserve anonymity. Data were securely stored on a password-protected device which can only be accessed by the researchers. The nature of this research undertaking was explained with great sensitivity, guaranteeing the study did not perpetuate further stigmatization. Language and practices were carefully chosen to respect the participants' unique cultural and social context as Filipino college students. Transparency, honesty, and a commitment to integrity guided every research step. The findings were reported accurately, free from biases or misinterpretations, to reflect the true experiences of the participants. By adhering to these ethical standards, the study not only contributed valuable insights into the relationship between self-stigma and mental well-being but also promoted a deeper awareness of the barriers Filipino students face in seeking mental health support. This commitment reflects the researchers' dedication to fostering a culture of empathy, understanding, and mental health advocacy in educational settings.

3.0 Results and Discussion

3.1 Demographic Profile of the respondents in terms of Age

Table 1 presents a summary of the student demographic profile based on age. The 300 students in the sample range in age from 17 to 21. 104 students, or 34.7% of the sample, are 19 years of age or younger, making up the biggest percentage of responses. Closely behind, making up 21.7% (65 students) of the respondents, are students aged 21 and above. Furthermore, the sample's age distribution is as follows: students aged 18 make up 21.3% (64 students), and the student population includes 61 twenty years old (20.3%) and 6 seventeen years old (2%).

Table 1. Demographic profile of the respondents in terms of age		
Program	Frequency	Percentage (%)
17	6	2.0%
18	64	21.3%
19	104	34.7%
20	61	20.3%
21	65	21.7%
Total	300	100.0%

Overall, the distribution of students in this demographic breakdown is even between the ages of 18 and 21, with a lower proportion of students who are 17 years old. Most of the student sample is between the ages of 18 and 21, which is the average range for college students. This gives the study a balanced perspective on this demographic. According to the National Center for Education Statistics (2018), the demographic parameters of college students, notably their age distribution, are normally within the range seen in this study. This shows that the sample accurately represents the general college student population, which increases the study's relevance and

applicability to broader educational contexts. Furthermore, Morena et al. (2024) stated that college students may have an existing mental health condition but are not engaged in treatment. Hence, conducting studies that tackle stigma, insufficient social support, negative attitudes, and emotional invalidation are important with this population.

3.2 Levels of the Self-Stigma of Seeking Help among Filipino College Students

Table 2 revealed that while participants have mild concerns about seeking psychological help, particularly regarding feelings of inadequacy and fears of diminished self-esteem, the overall attitude toward therapy is neutral to slightly negative. For instance, "I would feel inadequate if I went to a therapist" received a mean of 2.72, while "Seeking psychological help would make me feel less intelligent" received a mean of 2.23, indicating moderate reservations. However, on average, people responded that therapy would not severely undermine their self-esteem and/or self-confidence. In contrast, the mean score for "My self-confidence would be the same if I sought professional help" is 2.57. The findings indicate that although therapy is not outright hated, there are, however, self-image and stigma-related barriers that would be softened to increase the self-efficacy of seeking help.

Table 2. *Levels of the self-stigma of seeking help among Filipino college students*

Indicators	Mean	SD	Interpretation
1. I would feel inadequate if I went to a therapist for psychological help.	2.72	1.03	Disagree
2. My self-confidence would NOT be threatened if I sought professional help.	2.56	1.09	Agree & Disagree Equally
3. Seeking psychological help would make me feel less intelligent.	2.23	1.07	Disagree
My self-esteem would increase if I talked to a therapist.	2.40	0.93	Disagree
5. My view of myself would not change just because I made the choice to see a therapist.	2.53	1.06	Agree & Disagree Equally
6. It would make me feel inferior to ask a therapist for help.	2.60	1.09	Agree & Disagree Equally
7. I would feel okay about myself if I made the choice to seek professional help.	2.13	0.84	Disagree
8. If I went to a therapist, I would be less satisfied with myself.	2.43	0.98	Disagree
9. My self-confidence would remain the same if I sought professional help for a problem I could not solve.	2.57	0.98	Agree & Disagree Equally
10. I would feel worse about myself if I could not solve my own problems.	3.26	1.10	Agree & Disagree Equally
Overall Weighted Mean	2.59	1.01	Agree & Disagree Equally

This table measures the variability of responses for each statement, reflecting how many individual answers differ from the average. A higher SD indicates more variation, while a lower SD shows more participant agreement. For example, statements like "My self-confidence would NOT be threatened if I sought professional help" (SD=1.09) and "It would make me feel inferior to ask a therapist for help" (SD=1.09) show more variability, meaning participants had mixed opinions. In contrast, statements like "I would feel okay about myself if I chose to seek professional help" (SD=0.84) have lower SDs, indicating more consensus among respondents. Overall, the SD values suggest that while some aspects of therapy are widely agreed upon, there is notable diversity in how participants feel about its impact on their self-esteem and confidence. According to Sheikhan et al. (2023), mental illness stigma significantly hinders care-seeking and undermines mental health services across various global settings. Stigma causes individuals to delay seeking help and can lead to service refusal. This mental health stigma is particularly observed among low to middle-income countries (Javed et al., 2021). Stigma, a complex construct involving public, self, and structural components, directly affects people with mental illness, their support system, provider network, and community resources. Understanding stigma is crucial for reducing its negative impact on care-seeking and treatment engagement. Strategies to counteract stigma should include programs for mental health providers, mental health literacy, cultural competence, and family engagement campaigns. This supports the review of Kaur et al. (2021), wherein stigma reduction interventions were found to be crucial for improving mental health outcomes and narrowing the treatment gap. Moreover, designing comprehensive, evidence-based interventions that address stigma at multiple levels, including governmental and structural levels, is needed to combat mental health stigma and improve access to care effectively. Policy change is essential to overcome structural stigma that undermines government agendas promoting mental health care. Expanding research on the connection between stigma and care-seeking is also essential.

3.3 Levels of Mental Well-Being among Filipino College Students

Table 3 presents the mean levels and standard deviations of various indicators of students' mental well-being. The responses were measured on a Likert scale, with higher mean values indicating more favorable levels of mental well-being. The item "I've been able to make up my mind about things" has the highest mean score of 3.57 (SD=0.98), suggesting that students feel a strong sense of independence and decisiveness.

Table 3. *Levels of mental well-being among Filipino college students*

Indicators	Mean	SD	Interpretation
1. I've been feeling optimistic about the future	3.20	0.94	Some of the time
2. I've been feeling useful	3.16	0.97	Some of the time
3. I've been feeling relaxed	3.07	0.98	Some of the time
4. I've been dealing with problems well	3.37	0.93	Some of the time
5. I've been thinking clearly	3.23	0.94	Some of the time
6. I've been feeling close to other people	3.33	1.00	Some of the time
7. I've been able to make up my own mind about things.	3.57	0.98	Often
Overall Weighted Mean	3.28	0.82	Some of the time

This is closely followed by the item "I've been dealing with problems well," with a mean score of 3.37 (SD=0.93), indicating that students generally feel capable of managing their challenges effectively. "I've been feeling close to other people" also scores relatively high, with a mean of 3.33 (SD=1.00), reflecting positive social connections. In contrast, "I've been feeling relaxed" has the lowest mean score of 3.07 (SD=0.98), suggesting that students may experience some relaxation or stress management challenges. The overall weighted mean of 3.28, representing an average of these indicators (SD=0.96), would provide insight into the general mental well-being of students in this sample. This data suggests that students generally exhibit positive levels of well-being across most indicators, though some areas, such as relaxation, might benefit from further support or intervention. This mirrors the findings of Long et al. (2021) that mindfulness-based coping programs have shown promise in improving students' stress management, emotion regulation, and overall flourishing. Additionally, fostering stronger social support networks could further improve students' mental well-being, as reflected in the relatively high scores on social connectedness. This supports Newhart's (2023) claims that social competence and perceived social support have been identified as significant predictors of psychological well-being and reduced symptoms of depression, anxiety, and stress among college students. Moreover, self-awareness and the separation of personal identity from mental health challenges can likewise improve the mental health of college students. The feelings, behavior, and awareness that people are distinct from their issues are all relevant elements of mental well-being (Zevo Health, 2024).

3.4 Relationship between Self-Stigma of Seeking Help and Mental Well-Being

Table 4 presents the relationship between the self-stigma of seeking help and mental well-being among Filipino College students. The findings reveal a weak negative correlation ($r=-0.17$) between self-stigma of help-seeking and mental well-being, with a p-value of less than 0.001. Since the p-value is below the typical significance threshold of 0.05, the null hypothesis (H_0) is rejected.

Table 4. *Relationship between self-stigma of seeking help and mental well-being*

Variables	R-value	p-value	Decision	Remarks
Self-Stigma of Seeking Help and Mental Well-Being	-0.17	<.001	Reject H_0	Significant

The result indicates a statistically significant relationship between self-stigma of help-seeking and mental well-being, suggesting that higher levels of self-stigma are associated with lower levels of mental well-being. This finding emphasizes the potential impact of self-stigmatizing beliefs on students' mental health, underscoring the importance of reducing stigma around help-seeking to promote better mental well-being among students. The findings of the study are consistent with the research of Dagani et al. (2023), wherein it was found that psychological distress was found to be positively correlated with coping strategies, which in turn was negatively associated with the stigma of seeking help. In addition, Thai and Trang (2024) found that the self-stigma of seeking help increased the risk of mental health issues. Furthermore, Conceição et al. (2022) highlighted in their study that both personal and perceived depression stigma negatively impact attitudes toward professional help-seeking.

3.5 Regression Analysis Between Self-Stigma of Seeking Help and Mental Well-Being

Table 5 illustrates the relationship between the predictor variable and the criterion variable. The results indicate a significant intercept with an estimated mean score of 3.752 and a p-value of less than 0.001, suggesting a strong baseline effect. The predictor variable, Self-Stigma of Seeking Help Level, also shows a significant negative relationship with the criterion, as evidenced by an estimate of -0.188 and a p-value of 0.003. With an R^2 of 0.029 and an adjusted R^2 of 0.026, the model accounts for a small but noteworthy portion of variance, leading to the decision to reject the null hypothesis.

Table 5. Linear regression of self-stigma of seeking help and mental well-being

Predictor	Estimate	SE	t-value	p-value	Remarks
Intercept	3.752	0.16	22.88	<.001	Significant
Self-Stigma of Seeking Help Level	-0.188	0.06	-2.98	0.003	Significant

Note. Criterion = Mental Well-Being, $R^2 = 0.029$, Adjusted $R^2 = 0.026$, F-value = 8.86

These findings suggest that higher levels of self-stigma of seeking help can influence poorer mental health outcomes among Filipino college students, highlighting the need to address stigma in mental health interventions. This backs the investigation of Singh et al. (2021), which indicates that stigma significantly impacts mental health help-seeking behaviors among college students. Personal stigma negatively affects attitudes toward treatment and help-seeking intentions. This also supports that perceived public stigma influences help-seeking behavior, although its effect is mediated by personal stigma (Maeshima & Parent, 2020). Despite the small effect size, this prediction indicates that reducing self-stigma could contribute to improved mental well-being. Mental health programs should minimize self-stigma to encourage help-seeking behaviors, enhancing overall mental health support. In the case of Kirschner et al. (2020), interventions addressing stigma improve the students' attitudes toward help-seeking. Online interactive educational programs utilizing avatars depicting distressed individuals have effectively reduced stigmatizing attitudes.

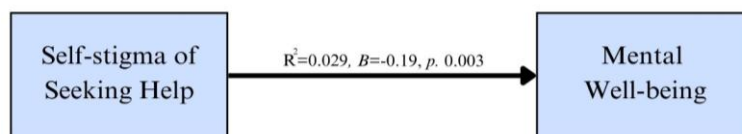


Figure 1. Simple linear regression

4.0 Conclusion

The researchers concluded that the self-stigma of seeking help is significantly associated with the mental health of Filipino college students. This self-stigma impairs Filipino college students' self-esteem, which discourages students from seeking help and exacerbates their mental health issues. Moreover, researchers suggested that reducing students' self-stigmatizing beliefs can foster healthier help-seeking behaviors. When individuals feel ashamed or consider themselves less worthy because of mental health issues, they become less likely to seek help from peers, counselors, or mental health professionals. According to Martinez et al. (2020), Filipinos across the world have general reluctance and unfavorable attitudes toward formal help-seeking despite high rates of psychological distress. The population prefers seeking help from family members and friends. Barriers cited include financial constraints and inaccessibility of mental health services. In comparison, overseas Filipinos were hampered by immigration status, lack of health insurance, language difficulty, experience of discrimination, and lack of acculturation to host culture. Filipinos are also prevented from seeking help by their sense of resilience and self-reliance. Filipinos utilized special mental health care only as a last resort or when symptoms became severe. Parungao (2024) reinforces the importance of addressing these barriers, noting that university students' mental health outcomes are significantly influenced by their coping styles and the availability of social support. This finding underscores the need for targeted mental health initiatives in academic settings to mitigate the negative impact of stigma and enhance students' coping mechanisms. Efforts to normalize discussions about mental health and build accessible support systems are crucial for fostering a healthier, more inclusive environment. Higher educational institutions are recommended to create a supporting environment where open discussions on mental health are encouraged and normalized. Designing initiatives such as mental health workshops, peer support groups, and awareness campaigns can contribute to a culture of understanding and acceptance, allowing students

to voice out difficulties and seek help without judgment. Daniele et al. (2022) stated that adolescents often experience discomfort due to individual experiences and the influence of the environment, which leads to mental health problems. Empowering students to seek assistance can benefit mental health, leading to positive academic performance and emotional resilience. Moreover, teachers play a crucial role in facilitating these interventions by promoting open conversations, reducing stigma, and creating a supportive environment for students to seek help, ensuring mental health support is integrated into the academic experience. Furthermore, school counselors are recommended to promote effective counseling alliances with students. Prim et al. (2023) indicated that self-stigma and perceived stigma negatively affect attitudes toward both face-to-face and online counseling, as well as intentions to seek help. Students identify several barriers to accessing school counseling services, including stigma, desire for self-reliance, lack of positive counselor relationships, and concerns about confidentiality (Auger et al., 2018). On the other hand, students who do seek help report more positive relationships with their school counselors and perceive them as more available (Yablon, 2018). To promote help-seeking behavior, it is crucial to address stigma and foster positive attitudes toward counseling. Future researchers are encouraged to conduct qualitative studies that delve deeper into the personal narratives of Filipino college students regarding the self-stigma of seeking help and its impact on psychological well-being. Such research would offer a richer understanding of these students' unique challenges. Additionally, it is recommended that future studies use advanced statistical techniques, including moderation, mediation, and structural equation modeling, to explore further the complexities of the relationship between self-stigma and mental well-being. This approach would help broaden the understanding of these dynamics across various student populations, providing valuable insights for developing more targeted and effective mental health interventions for Filipino college students.

5.0 Contributions of Authors

All the authors declare equal contributions to each section. The authors reviewed and approved the final work.

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7.0 Conflict of Interests

The authors declare no conflicts of interest in the publication of this paper.

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Impact of Secondary School Principals' Supervisory Practices on Teachers' Morale and Behavior: Basis for a Proposed Intervention Program

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Abstract. This study investigates the supervisory practices of secondary school principals in Lanao del Sur 1 and Marawi City divisions and their impact on teachers' morale and behavior. The research aimed to assess principals' effectiveness in fostering teacher-community relations, improving teaching and learning, and evaluating teacher performance. Additionally, it examined teachers' morale in areas such as job satisfaction, rapport with principals, and workload, alongside their professional behavior and classroom practices. A descriptive-correlational research design was employed, with data gathered from 285 teachers via a modified checklist questionnaire. Descriptive statistics were used to analyze the data, including frequency counts, percentages, and weighted means. At the same time, Pearson's Product Moment Correlation was applied to test the relationships between supervisory practices, teachers' morale, and behavior. The findings revealed that principals' supervisory practices were "often practiced" in all areas, with mean ratings of 3.98 for improving relations and teaching and 3.81 for evaluating teacher performance. Teachers reported high morale, particularly in job satisfaction (mean = 3.58) and professional rapport (mean = 3.23-3.58), though salary and workload scored lower (mean = 2.54-2.63). Teachers' behavior, including classroom preparation and professional growth, was rated as "always practiced" (mean = 4.42-4.47). Significant positive correlations were found between supervisory practices and both teachers' morale ($r = 0.67$, $p < 0.05$) and behavior ($r = 0.63$, $p < 0.05$). The study recommends enhancing supervisory practices, supporting professional development, and improving teacher well-being to foster a positive school environment. Further research is suggested to explore broader contexts and additional variables.

Keywords: Supervisory practices; Secondary school principals; Teachers' morale; Teachers' behavior; Teachers' satisfaction; Professional growth; Correlational analysis; Teacher performance.

1.0 Introduction

The supervisory practices of school administrators are an essential tool for improving instruction, yet they often receive less attention than teachers' classroom practices. This is because it is believed that the influence of school administrators on student achievement is indirect, "operating through others who have a more direct and extensive influence on students" (Place, 2011), whereas "others" refers to teachers. Waters and Kingston (2005) noted that "principal leadership is positively correlated with student achievement," a view supported by Stronge (2010), who emphasized that the role of school administrators, including their supervisory practices, is undeniably a key factor in improving educational outcomes.

As Place (2011) argues in **Principals Who Dare to Care**, just as plants and animals require proper care and feeding, students and teachers need support and encouragement. He stresses that the most critical aspect of principalship is caring for the people they work with and fostering an environment of mutual care and respect. In this context, supervisory practices should be prominent. For instance, in American schools, classroom walk-throughs are now recognized as an effective tool for improving teaching and learning (Kachur et al., 2010). This practice is familiar to teachers in the Philippines, where it is known as 'visitation' or 'observation.'

No organization can rise above the quality of its workforce, and school leaders play a crucial role in ensuring quality educational services. Numerous studies of high-performing corporations reveal that human resources are at the forefront of organizational success (Dressler, 2000). Given that people are the most crucial aspect of school systems, a more critical look at the supervisory practices of school administrators is essential. In the municipalities of Lanao del Sur and Marawi City Divisions, where public secondary schools are located, the supervisory practices of school administrators are often found lacking. Angin's (2015) study recommended that school administrators improve their management practices, particularly in using instructional materials, as this has led to low teacher satisfaction regarding school leadership. Similarly, Mutin (2014) reported that teachers and school administrators in these regions have shown moderate adaptation to the changes demanded by the K+12 program. These findings underscore the need for further investigation into the supervisory practices of school administrators in Lanao del Sur and Marawi City, particularly as these practices affect teachers' morale, behavior, and performance. Poor supervisory practices can have serious consequences for teachers' motivation and instructional quality, which, in turn, negatively impact student achievement. If left unaddressed, this situation could become a significant barrier to achieving quality education.

However, there remains a notable gap in recent studies explicitly addressing the supervisory practices of school administrators in these regions. While existing research has shed light on general trends in school leadership, there is a lack of in-depth, localized studies focusing on the unique socio-cultural and educational contexts of Marawi City and Lanao del Sur. These areas have distinct challenges that may not be adequately addressed by broader studies, making it critical to understand the specific supervisory needs of these regions. This gap in the literature highlights the necessity for this study, which aims to investigate the supervisory practices of secondary school principals in Lanao del Sur and Marawi City and their impact on teachers' morale and behavior. By focusing on this under-researched area, the study seeks to provide valuable insights that can guide improvements in supervisory practices, ultimately benefiting teacher performance and student learning outcomes in these communities.

Research by Maulana and Azkiya (2003), citing De Grauwe (2001), asserts that improving school quality and student achievement should be the top priority for all nations, especially those classified as "developing." Learning outcomes are heavily influenced by the quality of education provided, and as Barro (2006) states, better education contributes to national development and economic progress. Given that teachers are one of the most critical inputs in the education system, the quality of education depends significantly on how teachers are trained and managed. De Grauwe (2001) further emphasizes that national authorities rely on the school supervision system to monitor student achievement and other vital school quality indicators. As defined by Oransaju (1983), supervision involves motivating, inspiring, and guiding groups to collaborate effectively in achieving the institution's goals. The core of supervision is monitoring staff performance, identifying strengths and weaknesses, and implementing cooperative strategies to address deficiencies while enhancing strengths.

Section 17 of the Education Act of 1982 (Batas Pambansa Blg. 232) mandates the duties and obligations of school officials, teachers, and other personnel in ensuring quality education (Baccarat, 2004). Effective supervision practices are crucial for fostering the successful implementation of educational policies and improving school performance. Medina (2006) argues that supervising human resources, unlike other organizational components, is one of administrators' most challenging tasks. The success of any school in achieving its goals depends mainly on its leaders, who perform critical supervisory functions. Recognizing the importance of supervision in the educational system, this study seeks to clarify the supervisory practices of school principals and their influence on teachers' morale and behavior. By understanding how principals' supervisory practices affect teachers' morale and behavior, this study aims to identify ways to improve the overall quality of teaching and learning and, ultimately, student outcomes in the Lanao del Sur and Marawi City Divisions. Specifically, this research addresses

the gap in recent studies focusing on the supervisory practices of school administrators in these regions, providing the rationale for investigating how these practices influence teacher motivation and performance.

2.0 Methodology

2.1 Research Design

The study used a descriptive-correlational research design to explore the relationship between secondary school principals' supervisory practices (independent variable) and teachers' morale and behavior (dependent variables). The choice of variables was based on the well-established role of principals in shaping the school environment, with supervisory practices influencing teacher motivation and professional behavior. Descriptive statistics, including frequency counts and percentages, were used to profile respondents, while weighted means assessed the intensity of principals' practices and teachers' morale and behavior. Pearson's r was applied to examine the relationship between these variables. The reliability of the instruments was ensured through pre-testing and consistency checks. At the same time, validity was established through expert review and alignment with established constructs in educational leadership and teacher motivation. This design effectively addresses the research objectives and provides a solid foundation for drawing meaningful conclusions.

2.2 Research Locale

This study was conducted in the Marawi City and Lanao del Sur I divisions during School Year 2014-2015. Marawi City, known as the Islamic City of Marawi, is the capital of Lanao del Sur and a critical regional socio-political and educational center. Located on the shores of Lake Lanao, it is home to Mindanao State University and 152 public and private schools. Lanao del Sur, a province with 39 municipalities, has a predominantly agricultural economy and is rich in cultural heritage. The study area covered various districts in both highland and lowland regions, including numerous national high schools managed by principals in both divisions.

2.3 Research Participants

The study's respondents comprised 285 teachers from the selected secondary schools in Marawi City and Lanao Sur I divisions. Forty-four (44) of the teacher respondents were from Marawi City Division, and two hundred and forty-one (241) were from the selected secondary high schools in Lanao del Sur-1 who were officially employed during the school year 2014-2015 when the study was conducted.

2.4 Research Instrument

The researcher used two instruments for this study. The first was a self-structured, non-standardized questionnaire to gather the teachers' demographic profiles. The second was a standardized, modified checklist based on Cabural's (2005) study, designed to assess principals' supervisory practices about teachers' morale and behavior. The supervisory practices questionnaire had 30 items divided into three areas: improving teacher relations, improving teaching and learning, and evaluating teacher performance. Teachers' morale was assessed with 50 items, while behavior was measured with 20 items across classroom preparation and professional growth. The questionnaire was the primary data collection tool, pre-tested on 50 teachers from Lanao del Sur II Division to ensure validity. The results were analyzed to refine the instrument, which was deemed highly acceptable and ready for field use.

2.5 Data Gathering Procedure

A systematic procedure was developed to administer the questionnaire efficiently. A permit was obtained from the School Division Superintendents of Lanao del Sur I and Marawi City. The questionnaire and a confidentiality assurance letter were distributed to schools after approval. The researcher, with the help of assistants, personally administered the questionnaires. The first questionnaire collected data on respondents' demographic profiles and analyzed them using simple frequency counts and percentages. The second questionnaire gathered information on principals' supervisory practices, teachers' morale, and behavior, with the results used for correlation analysis. Respondents were randomly selected and gathered in a distraction-free location. They were reminded to follow instructions carefully, with no time restrictions imposed to ensure thoughtful responses. The questionnaires were collected immediately after completion.

2.6 Ethical Considerations

This research study adhered to strict ethical guidelines. Participation was voluntary, and respondents were informed of their right to withdraw from the study at any time, especially if they felt uncomfortable. Every effort was made to protect participants from physical, social, and psychological damage, ensuring that risks were minimized to the greatest extent possible. The dignity, well-being, and autonomy of the secondary teachers who participated were consistently upheld. Confidentiality of all research data was maintained throughout the study, safeguarding the privacy and rights of respondents and ensuring academic and scientific integrity. Additionally, proper practices were employed to guarantee transparency and accuracy in communicating results, providing the research was free from plagiarism or misconduct.

3.0 Results and Discussion

3.1 Profile of the Teacher Respondents

Table 1 shows the number of National Secondary Schools of Lanao del Sur and Marawi City Divisions, which, added up, is 988.

Table 1. *Distribution of the respondents by division*

Division	Population	Sample
Lanao del Sur- I	834	241
Marawi City	154	44
Total	988	285

This population is too large and unwieldy for the researcher to cover in her study, and the cost entailed exorbitant, so simple random sampling was used with the help of Sloven's formula, as shown below.

$$S = \frac{N}{1 + N(0.05)^2} = \frac{988}{1 + 988 (0.0025)} = \frac{988}{3.47} \quad S = 284.73 \text{ or } 285$$

As computed, the representative sample of the whole population was 285.

Table 2 shows the age distribution of the respondents. Among them, 1.40% were aged 60-65, 2.46% were 56-59, and 7.02% fell within the 51-55 age bracket. The largest age groups were those between 46-50 years old (22.46%), followed by those aged 26-30 (20%), 31-35 (18.25%), and 36-40 (14.74%). The most represented group, teachers aged 46-50, suggests a concentration of respondents in their middle adulthood.

Table 2. *Frequency and percentage distribution of the respondents by age*

Age	Frequency	Percentage
60-65	4	1.40
56-59	7	2.46
51-55	20	7.02
46-50	64	22.4
41-45	28	9.82
36-40	42	14.7
31-35	52	18.2
26-30	57	20.0
20-25	11	3.86

According to Erikson's Life-Span Development Theory, individuals in this stage are characterized by the psychosocial task of generativity, which involves contributing positively to future generations. Teachers in this age range are at the peak of their careers, with well-defined goals and a strong sense of responsibility. Their focus on passing on knowledge aligns with House's Path-Goal Theory, which posits that individuals who set clear, generative goals tend to be more motivated in their professional roles. This result implies that more experienced, mature teachers may have a significant advantage in effectiveness due to the wealth of teaching experience and personal development they have gained over the years. Bandura's concept of self-efficacy, the belief in one's ability to succeed in specific situations, supports this notion. These experienced teachers are likely to have developed a strong sense of self-efficacy, which serves as intrinsic motivation, helping to keep their morale high. As further supported by Arellano (as cited by Mangca, 2009), high teacher morale directly impacts productivity and effectiveness in the classroom. Teachers who maintain high morale are likelier to inspire students and foster a better learning environment. Conversely, low morale can diminish a teacher's potential and the overall efficiency

of the school. Additionally, research mentioned by Ampog (2009) suggests that age plays a crucial role in personal maturity and career performance. Mature individuals, especially teachers, have a heightened sense of responsibility, directly influencing their readiness and effectiveness in their professional roles. This underscores the importance of age and experience in shaping the career success of educators.

Table 3 shows that 7.02% of the respondents are male, while 93.98% are female, indicating a significant numerical dominance of women in teaching. This trend aligns with broader demographic shifts in recent decades, where more women have pursued education and careers.

Table 3. *Frequency and percentage distribution of the respondents by sex*

Gender	Frequency	Percentage
Male	20	7.02
Female	265	93.9

Numerous studies confirm this pattern, including Naga (2013) and Lucman (2014), which reveal a growing preference among women for teaching jobs, often attributed to their nurturing nature and societal roles. The dominance of female educators has been consistently observed in both the Philippines and other countries, such as Australia, where female teachers outnumber their male counterparts by a ratio of 2:1 or more in younger age groups (Mackenzie, 2007, as cited by Mangca, 2000). In the Philippines, studies by the Department of Education also report higher numbers of female teachers, administrators, and students, especially in public high schools. This trend is often explained by gender-related factors that influence career choice, with teaching considered a prestigious and respected profession in Meranaw society. Additionally, gender studies like Gilligan's (1982, 1997) work emphasize that women are drawn to careers in nurturing roles due to their "care perspective" — a focus on relationships and compassion, which are valuable in teaching and nursing. Further supporting this pattern, Mangotara (2013) found that most school administrators in Lanao del Sur were female, reflecting women's continued dominance in the region's educational field. This gendered trend in teaching highlights how traditionally "feminine" values, such as care and connectedness, influence women's choice of career paths.

Table 4 reveals that 16.49% of respondents are single, while 76.14% are married, indicating that most secondary teachers in Lanao del Sur are married. A small minority are widowed (2.46%), separated (4.56%), or widowers (0.35%).

Table 4. *Frequency and percentage distribution of the respondents' civil status*

Civil Status	Frequency	Percentage
Single	47	16.4
Married	217	76.1
Widower	1	0.35
Widow	7	2.46
Separated	13	4.56

This aligns with Bacarat's (2004) study, where most teachers were married. Since many respondents are in middle adulthood, they are of typical "marriageable" age. According to Hung (1994), married teachers often possess higher self-concepts in pedagogy and personality. H. Ali's (2010) study also shows that most respondents (84.69%) were married, similar to Macatanong's (2010) findings on political leaders in Lanao del Sur. Likewise, Mangotara (2013) noted that 81% of school principals were married, suggesting that marital stability enhances their sense of responsibility in leadership roles. Married teachers are seen as having an advantage over their single peers, drawing from life experiences to enrich their teaching. They are also believed to manage children better, as they have developed coping mechanisms through raising their own, strengthening their self-efficacy and confidence in handling classroom challenges (Bandura, 1997).

As shown in Table 5, the frequency and percentage distribution of the 285 respondents are as follows: Ph.D. holders, 0; MA with Ph.D. units, 5 (1.75%); MA/MS degree, 6 (2.11%); AB/BS with MA units, 89 (31.23%); BSE/BEED, 149 (52.28%); AB/BS with education units, 33 (11.58%); and Islamic studies with education units, 3 (1.05%). Most (52.28%) of teachers in Lanao del Sur hold a Bachelor of Science in Education or Bachelor of Elementary Education, followed by 31.23% who have earned some MA units. Only 2.11% have completed their master's studies, and none hold a Ph.D.

This result highlights sluggish growth in educational attainment, echoing Guro's (2016) findings with teachers in Marantao. Continuing education is a shared responsibility of institutions and individuals, crucial for adapting to rapid educational changes. Teacher education is a lifelong process involving refining subject knowledge, teaching skills, and adaptability (Hedge & Whitney, 1996). The importance of the attitudinal dimension in teacher education is also noted, emphasizing that effective teaching requires both content mastery and the development of pedagogical content knowledge (PCK) (Shulman, 1987).

Table 5. *Frequency and percentage distribution of the respondents by highest educational attainment*

Educational Level	Frequency	Percentage
Ph.D. Degree	0	0.00
MA with Ph.D. Units	5	1.75
MA/MS Degree	6	2.11
BS with MA Units	89	31.2
BSE/BEED	149	52.2
AB with Education Units	33	11.5
Islamic Studies with Education Units	3	1.05

Corpus and Salandan (2007) define a professional teacher as completing a rigorous academic program and meeting licensing requirements in the Philippine educational system. In the U.S., the process is more stringent, involving national licensing tests and standards (Spring, 2002). This study's results support Cook's (1979) findings on factors affecting teacher morale, including the importance of professional growth and feeling valued. Barro (2006) notes that higher-quality education fosters economic growth, and the human capital theory indicates that educational attainment directly impacts a country's development. Stronge (2010) emphasizes the significance of quality teachers, underscored by the equation Effective Teachers = Student Achievement. In the U.S., a master's degree in educational leadership is often the minimum requirement for administrators, with similar expectations in the Philippines, where principals must have at least a master's degree and appropriate licensure (RA 9155).

As shown in Table 6, the distribution of respondents is as follows: SST-III, 6 (2.11%); MT-III, 0; SST-II, 17 (5.96%); MT-II, 2 (0.70%); SST-I, 253 (88.77%); and MT-I, 7 (2.46%). The majority (88.77%) hold the rank of Secondary School Teacher I (SST-I), reflecting that most are Bachelor's degree holders without graduate program completion. The smaller number of Master Teacher I (2.46%) and Master Teacher II (0.70%) likely consists of those who have obtained their Master's degrees, corresponding to the 2.11% with MA/MS degrees and 1.75% with MA/MS units. This suggests that academic rank is closely tied to educational attainment, with teachers needing requisite qualifications for promotion.

Table 6. *Frequency and percentage distribution of the respondents by present position*

Position	Frequency	Percentage
SST-III	6	2.11
MT-III	0	0.00
SST-II	17	5.96
MT-II	2	0.70
SST-I	253	88.7
MT-I	7	2.46

Rowland (2008) cited that personal and professional development significantly impacts teacher morale. Lucman (2014) found that a majority held the Master Teacher I rank, with limited promotions to Master Teacher II due to budget constraints in the Marawi City Division. The promotion process is slow and rigorous, with many deserving teachers awaiting better opportunities. Ferrer (1987), cited in Boloto (1992), supports these findings, noting that Master Teacher I positions dominate in Marawi City. Republic Act No. 7836 defines teaching as primarily classroom instruction in public and private schools. Macaindig (2012) outlined the roles of Teachers I, II, and III, which include developing lesson plans, tracking student progress, maintaining records, and supervising extracurricular activities. In addition to their classroom responsibilities, Master Teachers I to IV have leadership roles, such as instructional material preparation and developing training programs, providing mentoring, and conducting action research. They also lead the analysis and utilization of test results, demonstrating the multifaceted nature of their positions.

As shown in Table 7, 276 (96.84%) have regular or permanent status, while only 9 (3.16%) are provisional or temporary. This indicates that most teachers in the selected secondary schools in Lanao del Sur hold permanent appointments.

Table 7. *Frequency and percentage distribution of the respondents' appointment status*

Appointment Status	Frequency	Percentage
Regular /Permanent	276	96.8
Provisional	9	3.16

Harris (1986) emphasizes that teachers significantly impact the lives of children and youth, a view supported by extensive research on teaching and learning. Mackenzie (2007) corroborates this, noting that 88.2% of Australian teachers are permanently employed, full-time or part-time. According to Republic Act No. 4670 in the Philippines, teachers meeting civil service requirements can be appointed without a probationary period, ensuring stability and job security. Lucman (2012) found that 67.03% of her respondents had regular appointments, with provisional teachers unable to be promoted to Master Teacher positions due to the necessity of permanent status for such advancement. The data reveal that appointment status tends to decrease at higher ranks, highlighting the strict adherence to promotion criteria and standards.

As shown in Table 8, the distribution of respondents' years of teaching experience is as follows: 22 and above, 13 (4.56%); 19-21 years, 16 (5.61%); 16-18 years, 26 (9.12%); 13-15 years, 29 (10.18%); 10-12 years, 58 (20.35%); 7-9 years, 34 (11.93%); 4-6 years, 45 (15.79%); 1-3 years, 58 (20.35%); and below 1 year, 6 (2.11%). There is no clear majority, but the most prominent groups are in the 10-12 years (20.35%), 1-3 years (20.35%), 4-6 years (15.79%), and 7-9 years (11.93%) categories. Many respondents (20.35%, 11.93%, and 15.79%) have over three years of experience, indicating they are not novices and have likely dealt with various professional challenges. Conversely, the 20.35% with only 1-3 years of experience are still relatively new, typically serving as subject teachers focused on planning and implementing instruction. These novice teachers require induction programs to help them navigate their roles effectively, as they may face significant challenges and stresses during their initial years, impacting their self-efficacy and classroom management.

Table 8. *Frequency and percentage distribution of the respondents by work experience*

Years	Frequency	Percentage
22 and above	13	4.56
19-21	16	5.61
16-18	26	9.12
13-15	29	10.1
10-12	58	20.3
7-9	34	11.9
4-6	45	15.7
1-3	58	20.3
Below 1	6	2.11

The findings align with the age, position, and appointment status data, revealing a tapering of respondents with increased years of experience. Only 16 (5.61%) and 13 (4.56%) reported having 19-21 and over 22 years of teaching experience, respectively. Length of service significantly influences teacher competencies, including content mastery and attitudes, as emphasized in the National Competency-Based Teacher Standards (NCBTS). Studies indicate that public school teachers tend to remain in service longer than their private school counterparts, though longevity does not necessarily equate to job satisfaction.

Table 9 indicates the eligibility distribution among respondents: PBET passers, 11 (3.86%); LET passers, 166 (58.25%); RA 9293 eligibility holders, 44 (15.55%); RA 1080 recipients, 54 (18.94%); and PD 1006 beneficiaries, 10 (3.51%). The majority, 166 respondents (58.25%), passed the Licensure Examination for Teachers (LET). In contrast, only 3.86% passed the Professional Examination for Teachers (PBET), which was replaced by the LET as the required licensure for teaching positions.

R.A. No. 7836 emphasizes the state's commitment to quality education and the professionalization of teaching, suggesting that teachers generally follow this mandate in the Lanao del Sur I and Marawi City Divisions. Selection and Recruitment Boards across the region likely require a passing LET rating for teaching applicants. According

to the Code of Ethics for Professional Teachers preamble, licensed teachers are recognized as professionals with high moral values and technical competence, adhering to ethical standards. Thus, certified teachers are well-positioned to provide accurate insights into their principals' supervisory practices.

Table 9. Frequency and percentage distribution of the respondents by eligibility

Eligibility	Frequency	Percentage
PBET	11	3.86
LET	166	58.2
RA 9293	44	15.4
RA 1080	54	18.9
PD 1006	10	3.51

3.2 Perceived Supervisory Practices of the School Principals

Table 10 summarizes the mean, descriptive ratings, and rankings of school principals' perceived supervisory practices for improving community relations in selected Marawi City and Lanao del Sur secondary schools. The respondents agreed that principals consistently orient new teachers on grading systems and school policies (mean=4.29; SD=1.0955) and involve them in planning activities (mean=4.28; SD=0.8872). They also noted that principals frequently delegate responsibilities (mean=4.24; SD=0.9970) and assist with student-related difficulties (mean=4.13; SD=1.0156). However, protecting teachers from unreasonable public demands is practiced only sometimes (mean=3.04; SD=1.4711), and principals rarely help experienced teachers more than novices (mean=2.25; SD=1.2613). The grand weighted mean is 3.81, indicating that these practices are often implemented. This suggests that teachers view their principals actively working to foster relationships with teachers and the community.

Table 10. Weighted mean ratings of the perceived supervisory practices of school principals: improving relations with teachers and community

Indicators	Mean	SD	Interpretation
My principal orients new teachers on the grading system, use of facilities, and other school policies.	4.29	1.09	Always Practiced
My principal involves teachers in planning any activity.	4.28	1.08	Always Practiced
My principal delegates duties and responsibilities to teachers.	4.24	0.99	Often Practiced
My principal helps teachers work out difficulties with students and other teachers.	4.13	1.01	Often Practiced
My principal conducts individual and group conferences with teachers to trace matters concerning them.	4.11	0.99	Often Practiced
My principal gives praise or commendation to teachers for a lesson or assigned task successfully done.	4.07	1.19	Often Practiced
My principal allows free expression of feelings, issues, and proposals during faculty meetings.	4.06	1.08	Often Practiced
My principal initiates social activities where teachers and their superiors can meet informally on a friendly basis.	3.62	1.12	Often Practiced
My principal protects teachers from unreasonable demands by the public on their time and from unwarranted criticism.	3.04	1.47	Sometimes Practice
My principal gives more help to experienced teachers than to less experienced teachers.	2.25	1.26	Rarely Practiced
Overall Result	3.81		Often Practiced

Scaling: 4.21 - 5.00 = Always Practiced, 3.41 - 4.20 = Often Practiced, 2.61 - 3.40 = Sometimes Practiced, 1.81 - 2.60 = Rarely Practiced, 1.00 - 1.80 = Never Practiced

Effective programs, such as teacher orientation, can significantly aid novice teachers during their adjustment period, which is critical for successful classroom management. Studies indicate that support and mentoring can prevent new teachers from feeling overwhelmed, as many would reconsider their career choices after facing classroom challenges. The Teacher Education Council (R.A. No. 7784) aims to enhance teacher training and development by creating structured induction programs. These initiatives emphasize the importance of teacher involvement in decision-making processes, moving away from traditional managerial approaches to shared leadership. Encouraging open communication and support among faculty can improve the organizational culture and ultimately benefit student outcomes. Notably, the findings indicate a need for principals to offer equitable support to novice and experienced teachers, aligning with their practices of orienting teachers on essential school policies and grading systems.

Table 11 presents the mean, descriptive ratings, and rankings of school principals' perceived supervisory practices aimed at enhancing teaching and learning in selected secondary schools in Marawi City and Lanao del Sur. Teachers view their principals as consistently promoting professional development through practices such as facilitating attendance at seminars and conferences (mean=4.25, SD=1.0075) and ensuring communication of student progress to parents via multiple channels (mean=4.24, SD=1.0832). They also perceive practices such as informing teachers about educational trends (mean=4.18, SD=1.0940) and conducting unannounced classroom

visits (mean=4.13, SD=1.1262) as frequently implemented. These practices are generally seen as regularly performed with an overall grand weighted mean of 3.98.

Table 11. *Weighted mean ratings of the perceived school principal's supervisory practices in improving teaching and learning*

Indicators	Mean	SD	Interpretation
My principal arranges for teachers to attend seminars, workshops, and conferences.	4.25	1.00	Always Practiced
My principal makes provisions for reporting students' progress to parents, such as letters, talks with parents, or parent-teacher meetings.	4.24	1.08	Always Practiced
My principal keeps teachers informed of educational trends and innovations.	4.18	1.09	Often Practiced
My principal makes unannounced visits to classes to see what takes place in the class in the classroom.	4.13	1.12	Often Practiced
My principal inspects teachers' lesson plans from time to time.	4.11	1.21	Often Practiced
My principal makes follow-up conferences after classroom visits.	3.98	1.02	Often Practiced
My principal assists teachers in diagnosing students' learning difficulties.	3.80	1.25	Often Practiced
My principal arranges demonstration teaching to illustrate new effective methods.	3.78	1.24	Often Practiced
My principal holds school exhibits, open houses, and contests.	3.74	1.17	Often Practiced
My principal organizes seminars, workshops, and conferences within the school.	3.56	1.22	Often Practiced
Overall Result	3.98	1.14	Often Practiced

These findings suggest that teachers acknowledge their principals' commitment to improving teaching and learning, mainly by providing opportunities for professional growth and fostering parental involvement. Both elements are critical for promoting student success, as Chira (1993) and Santrock (2004) noted. Although the benefits of parental engagement in student achievement are well documented, research indicates that many schools do not actively prioritize this aspect (Eccles & Harold, 1996). When effectively carried out, instructional supervision provides teachers valuable feedback to improve their instructional techniques (Beach & Reinharts, 1989; Bays, 2001). This study shows that practices like classroom monitoring through unannounced visits are viewed positively, in contrast to the findings of Unda (2013), which reported lower levels of engagement in supervision. The principals in this study actively conduct classroom observations and hold follow-up conferences, ensuring continuous support for teachers.

Table 12 presents the mean, descriptive ratings, and ranks of the perceived supervisory practices of principals in selected secondary schools of Lanao del Sur and Marawi City regarding teacher performance evaluation. Teachers perceive their principals as often engaging in practices such as evaluating classroom management and student outcomes (Mean=4.12; SD=1.1718) and assessing their accomplishments (Mean=4.05; SD=1.2225). Other often-practiced methods include using multiple sources for evaluations (Mean=3.95; SD=1.2537), employing evaluations as development tools (Mean=3.93; SD=1.2636), and writing comments on rating forms during class observations (Mean=3.89; SD=1.2413). The average weighted mean is 3.81, indicating these practices are generally perceived as often practiced. These findings suggest that principals frequently implement supervisory practices that promote practical teacher performance evaluation.

Table 12. *Weighted mean ratings of the perceived supervisory practices of school principals in evaluating teachers' performance*

Indicators	Mean	SD	Interpretation
My principal evaluates teachers' performance based on classroom management and student outcomes.	4.12	1.17	Often Practiced
My principal evaluates the teacher's accomplishments.	4.05	1.22	Often Practiced
My principal uses more than one source in evaluating teachers.	3.95	1.25	Often Practiced
My principal uses evaluation as a means of development	3.93	1.26	Often Practiced
My principal writes comments or suggestions on the B.P.S. form 178 or another rating form during or after class observation.	3.89	1.24	Often Practiced
My principal discusses the salient points of the lesson with the teachers after class observation.	3.88	1.24	Often Practiced
My principal uses student evaluation to rate teacher performance.	3.79	1.35	Often Practiced
My principal uses self-evaluation (teacher evaluating himself) in rating teacher performance.	3.75	1.27	Often Practiced
My principal informs and explains their performance rating to teachers.	3.55	1.28	Often Practiced
My principal relies more on experience in rating teachers.	3.18	1.23	Sometimes Practiced
Overall Result	3.81	1.25	Often Practiced

Monitoring educational quality is a key responsibility of school oversight systems aimed at enhancing overall standards. Rous (2004) noted that respectful and encouraging principals positively impact teachers' willingness to adopt new strategies, thereby improving their performance. The Path-Goal Theory and Vroom's Expectancy

Theory further elucidate the relationship between supervisory practices and teacher performance. Adequate supervision helps eliminate obstacles, provides necessary support, and aligns incentives with goal achievement. Teachers' significant value on student outcomes enhances their commitment to effective teaching. Unda (2013) also found that high-performing schools emphasize encouraging teachers to take responsibility for their tasks, highlighting the link between effective supervisory practices and overall school performance. By evaluating teacher performance with multiple sources and development-focused methods, principals can foster a culture of continuous improvement, thus motivating teachers to enhance their instructional skills.

Table 13 examines the mean, descriptive rating, and rank of teachers' perceptions regarding the supervisory practices of their school principals in Lanao del Sur and Marawi City. The findings indicate that principals often practice improving teaching and learning, with a weighted mean of 3.98 (SD=1.1448). They also frequently work on enhancing relationships with teachers and the community (Mean=3.81; SD=1.1130) and evaluating teacher performance (Mean=3.18; SD=1.2547). These positive ratings are encouraging for principals. The results suggest that teachers view their principals as effectively applying supervisory practices that enhance teaching and learning, which is a core purpose of supervision.

Table 13. *Weighted mean ratings of the summary of the perceived supervisory practices of school principals*

Indicators	Mean	SD	Interpretation
Improving Teaching and Learning	3.98	1.14	Often Practiced
Improving Relations with Teachers and Community	3.81	1.11	Often Practiced
Evaluating Teachers Performance	3.81	1.25	Often Practiced

Goldhammer (1969) emphasized that increased monitoring boosts teachers' capacity and motivation for self-care and peer observation, while Zedepa (2003) introduced "auto supervision," advocating for collaborative peer coaching. This reflects the reciprocal improvement desired by both teachers and supervisors. All supervisory practices are equally crucial despite varying priorities for staff development among principals. Improving teacher performance remains a common goal across schools (Glickman et al., 2000; Zepeda, 2003). Blanchard (2010) asserts that effective leaders are lifelong learners continually seeking to enhance their expertise. This approach sets a positive example for others and emphasizes the importance of continuous learning to adapt and remain competitive.

3.3 Teachers' Morale

Table 14 presents respondents' perceptions regarding the supervisory practices of their principals in Lanao del Sur and Marawi City. The data indicates strong agreement on feeling fulfilled when tasks are appreciated by the principal (Mean=3.49; SD=0.5971) and the development of effective communication lines with the principal (Mean=3.32; SD=0.7560). Respondents also agreed that their principals make their work easier (Mean=3.22; SD=0.8342), foster a sense of belonging (Mean=3.14; SD=0.7532), recognize teaching procedures (Mean=3.12; SD=0.6278), and handle problems sympathetically (Mean=3.08; SD=0.737). They expressed challenges and motivation from the principal's leadership (Mean=3.02; SD=0.8697) and a desire for close contact (Mean=2.99; SD=0.7644). However, they disagreed that favoritism is shown in principal-teacher relations (Mean=1.67; SD=0.9519).

The overall rapport with the principal has a weighted mean of 2.97 (SD=0.7656), described as agreeable. These results suggest that respondents believe they have a positive rapport with their principals, particularly valuing appreciation for their work. This aligns with motivational theories like Goal-Path Theory, which emphasizes that a supervisor's behavior should lead to satisfaction. As noted by Maslow's hierarchy of needs, recognition of accomplishments is a crucial human need. Effective communication is also highlighted as essential for building teacher morale, as Cook (1979) emphasized the importance of personal interaction and appreciation from administrators. The study's findings suggest that the principals' supportive and collaborative approach enhances teachers' job satisfaction and performance. The contemporary approach to supervision, as outlined by Oliva and Pawlas (1997) and Neagley and Evans (1980), prioritizes collaboration over control, fostering a positive environment for growth. This underscores the significance of strong principal-teacher relationships in achieving educational goals.

Table 14. *Weighted mean ratings of the respondent's morale on the aspect of teacher rapport as influenced by the principal*

Indicators	Mean	SD	Interpretation
I feel fulfilled when fulfilling a task and that the principal appreciates it.	3.49	0.59	Very Much Agree
The line and method of communication between teachers and the principal in our school are well developed and maintained.	3.32	0.75	Very Much Agree
My principal makes my work easier and more pleasant and intrinsically motivated me to do it.	3.22	0.83	Agree
I am eager to attend classes because our principal promotes a sense of belonging among the teachers in our school.	3.14	0.75	Agree
My principal understands and recognizes the teaching procedures and activities I have been using.	3.12	0.62	Agree
My principal is concerned with the problems of the faculty and handles the issues sympathetically, which always inspires me to accomplish more in my work.	3.08	0.73	Agree
I am challenged and motivated by my principal's leadership, and it stimulates my professional growth.	3.02	0.86	Agree
I make a real effort to maintain close contact with the principal.	2.99	0.76	Agree
I feel free to criticize administrative policy at faculty meetings called by the principal for the benefit of the school.	2.61	0.76	Agree
Our principal shows favoritism in his relations with the teachers in our school, but it challenges me to be the best.	1.67	0.95	Very Much Disagree
Overall Result	2.97	0.76	Agree

Scaling: 3.28 – 4.00 = Very Much Agree, 2.52 – 3.27 = Agree, 1.76 – 2.51 = Disagree, 1.00 – 1.75 = Very Much Disagree

Table 15 presents the mean, descriptive rating, and rank of teacher satisfaction regarding their profession. Respondents showed strong agreement on the following points: feeling fulfilled in their profession and attending classes regularly to ensure student learning (Mean=3.84; SD=0.4079); viewing teaching as their most significant contribution to society through student development (Mean=3.79; SD=0.4472); and experiencing personal satisfaction when students learn (Mean=3.78; SD=0.4505). Additionally, they regularly review and update their instructional practices (Mean=3.77; SD=0.504), plan their daily classes to meet learning goals (Mean=3.69; SD=0.5717), and participate in school activities to enhance excellence (Mean=3.66; SD=0.4808). They also feel responsible for staying informed about students (Mean=3.55; SD=0.5579) and believe in their competence as teachers (Mean=3.55; SD=0.6235). Overall, the mean satisfaction rating is 3.56 (SD=0.5545), indicating high levels of satisfaction with teaching.

Table 15. *Weighted mean ratings of the teacher's morale on the aspect of satisfaction with teaching as influenced by the school principals*

Indicators	Mean	SD	Interpretation
I feel fulfilled with my profession and attend classes regularly because I want my students to learn.	3.84	0.40	Very Much Agree
Teaching enables me to contribute significantly to society, for I have molded my students.	3.79	0.44	Very Much Agree
Teaching gives me a great deal of personal satisfaction when my students learn something,	3.78	0.45	Very Much Agree
I regularly review and update my instructional practices to ensure that my students will enjoy the class discussion.	3.77	0.50	Very Much Agree
I plan regularly my daily classes to ensure that my students learn to satisfy my teaching-learning goals.	3.69	0.57	Very Much Agree
I coordinate and cooperate with any activities in our school because I want our school to become at par excellence.	3.66	0.48	Very Much Agree
I make sure I am well-informed about students, for it makes me feel guilty if something happens to them without my intervention.	3.55	0.55	Very Much Agree
I feel competent and successful in my teaching career because I have effectively done my role as a teacher.	3.55	0.62	Very Much Agree
I may not be the best, but I have been one of the best teachers because of my desire for my students to be the best.	3.05	0.76	Agree
I disagree with some of the unsatisfactory school policies because I want our school to improve, so I brought constructive comments.	2.96	0.73	Agree
Overall Result	3.56	0.55	Very Much Agree

These findings suggest that teachers are delighted with their profession, feel fulfilled and attend classes with the intent to support student learning. Principals' supervisory practices contribute to this fulfillment and pride, with effective student learning ranked third and engaging class discussions through updated practices ranked fourth. Iqbal (1996) emphasizes the importance of teachers' roles in the classroom and the community.

Table 16 underscores the crucial role of leadership in fostering a positive work environment for teachers, as shown by high mean scores in areas like collegial acceptance and unity in achieving school goals. The principal's leadership style appears central to these outcomes, with teachers strongly agreeing that experienced faculty accept younger colleagues due to the principal's favorable treatment (Mean=3.52, SD=0.5664) and that they are united in their goals (Mean=3.48, SD=0.6366). This reflects transformational leadership principles, where leaders encourage collaboration and inclusivity, creating a supportive environment that enhances team cohesion and morale. The strong sense of camaraderie and respect among teachers (Mean=3.43, SD=0.8306) further highlights how the principal's leadership fosters a community-oriented culture. This supports the idea that when leadership prioritizes respect and teamwork, it directly influences positive workplace dynamics, as evidenced by the reported comfort in working together (Mean=3.42, SD=0.6261).

Table 16. *Weighted mean ratings of the teachers' morale on the aspect of rapport among teachers as influenced by the school principals*

Indicators	Mean	SD	Interpretation
Experienced faculty members accept new and younger members as colleagues because the principal shows favorable treatment.	3.52	0.56	Very Much Agree
Teachers are united in achieving the goals of our school, and all of us are trying our best to achieve the school's goals.	3.48	0.63	Very Much Agree
My teaching associates are well prepared for the job because we were allowed to grow professionally and personally by being exposed to different trainings.	3.46	0.64	Very Much Agree
Generally, teachers in our school do not take advantage of one another because we respect one another, and the principal knows how to unite us.	3.43	0.83	Very Much Agree
I feel comfortable being with my co-teachers because they will support me in being the best I can be.	3.43	0.63	Very Much Agree
Our school's teachers work well together during activities and usual days.	3.42	0.62	Very Much Agree
Other teachers in our school appreciated my work due to the continuous encouragement of my principal.	3.24	0.69	Agree
The teachers in our school have a desirable influence on the values and attitudes of their students, and we are also producing competent and holistically developed students.	3.21	0.68	Agree
The teachers in our school cooperate to achieve common goals as influenced by the principal.	3.20	0.66	Agree
There is a great deal of grouping, arguing, taking sides, and feuding among our teachers as influenced by our principal.	1.87	0.89	Disagree
Overall Result	3.23	0.68	Agree

Research by Leithwood and Jantzi (2005) emphasizes that leadership encouraging collaboration directly impacts the overall teaching environment, improving morale and instructional practices. Teachers' responses also point to opportunities for professional growth, with a mean of 3.46 (SD=0.6413), suggesting that not only does the principal foster a respectful environment but also one where professional development is prioritized. This is consistent with Dufour's (2004) and Blasé & Blasé's (2004) research, which shows that leadership that encourages teacher growth and reflective practice contributes to improved instructional quality and teacher motivation. Maslow's hierarchy of needs theory can help explain these findings, particularly about the need for belongingness and positive relationships in the workplace. The data reflect how the principal has successfully addressed these needs, enabling teachers to feel secure, supported, and part of a collective effort, strengthening morale. The relatively low standard deviations suggest a consistent experience across the faculty, indicating that the positive rapport is a shared sentiment rather than an isolated experience. The lower mean (1.87, SD=0.8978) regarding discord or rivalry among teachers suggests that competitive or adversarial behaviors are rare, reinforcing the perception of a harmonious, cooperative school culture. This aligns with research that shows environments with low internal conflict promote better collaboration and higher teacher satisfaction, which can directly translate into enhanced student outcomes.

Table 17 explores teacher morale about salary, revealing mixed sentiments among respondents. Teachers generally agreed that they are satisfied with the policy governing salary increases (Mean=3.27, SD=0.9572), indicating a sense of fairness in adjusting their pay. They also felt that the salary schedule reflects their competencies (Mean=3.07, SD=0.5095) and that they clearly understand the policies related to salary increases (Mean=3.05, SD=0.7347). These results suggest that while the structure and transparency of salary policies are appreciated, challenges remain in terms of adequacy. A key area of concern is the insufficiency of salaries to meet family expenses, with respondents disagreeing on this aspect (Mean=2.24, SD=0.8807). Additionally, there is dissatisfaction with the communication surrounding salary-related suggestions (Mean=2.21, SD=0.6904), pointing

to a gap in the dialogue between teachers and administration on compensation issues. This indicates that while the policies are viewed positively, salary amounts and communication mechanisms need improvement. The overall weighted mean of 2.63 (SD=0.8084) reflects a moderate level of satisfaction with salary, yet the amount teachers receive may not fully meet their financial needs.

Table 17. *Weighted mean ratings of the teachers' morale on the aspect of teacher salary as influenced by the supervisory practices of the school principals*

Indicators	Mean	SD	Interpretation
I am satisfied with the policy for granting a salary increase.	3.27	0.95	Agree
The salary schedule in our school adequately recognizes teacher competency.	3.07	0.50	Agree
Teachers clearly understand the policies governing salary increases.	3.05	0.73	Agree
Salaries paid in this school system compare favorably with salaries in another system I am familiar with.	2.72	0.73	Agree
The principal ensures teachers' salaries are released on time to motivate them extrinsically.	2.63	0.93	Agree
Salary policies are administered with fairness and justice.	2.54	0.73	Agree
Within the limits of financial resources, the regional wages board tries to follow a generous policy regarding fringe benefits.	2.47	0.68	Disagree
The salary I received is enough for my family's expenses.	2.24	0.88	Disagree
The teachers feel the administration adequately transmits salary suggestions to the local school board.	2.21	0.69	Disagree
The principal sometimes imposes contribution in exceptional cases on a basis and as agreed upon by teachers and our principal.	2.13	1.21	Disagree
Overall Result	2.63	0.80	Agree

This finding aligns with broader theories of job satisfaction, which suggest that salary alone is insufficient to foster high morale. Handy (1999) and Roe (1956) both highlight that intrinsic factors – such as professional commitment, the quality of the work environment, and a sense of purpose – are equally important contributors to job satisfaction. The results of this study support this view, indicating that while salary policies are essential, other aspects of the teaching profession play a significant role in maintaining teacher morale. Thus, while teachers may feel acknowledged and fairly treated regarding salary policies, their financial needs remain an ongoing issue that could impact their overall job satisfaction.

Table 18 highlights the morale of teachers regarding their teaching load. Teachers strongly agreed that their workload is reasonable when their principal is supportive (Mean=3.39; SD=0.5993) and that teaching should be prioritized over other activities (Mean=3.28; SD=0.7485). They agreed that their overloading is reasonable and explained by their principals (Mean=3.05; SD=0.8849) and that they can manage their class schedules (Mean=2.79; SD=0.7218). However, they disagreed that they are burdened with excessive clerical work or that their classes are a "dumping ground" for problem students (Mean=1.85; SD=1.0102). The overall weighted mean for teacher loading was 2.54, with a standard deviation of 0.247.

Table 18. *Weighted mean ratings of the teachers' morale on the aspect of teacher load as influenced by their school principals*

Indicators	Mean	SD	Interpretation
The number of hours a teacher must render to work is reasonable, especially if the principal is encouraging their work.	3.39	0.59	Very Much Agree
My teaching load restricts me from attending other activities, but I must prioritize teaching.	3.28	0.74	Very Much Agree
The overloading of the teachers in our school is reasonable and was explained to us by our principal to avoid complaints.	3.05	0.88	Agree
The schedule of my classes is advantageous, and I can manage it.	2.79	0.72	Agree
My teaching load is sometimes unreasonable, but the principal explains that it is for the benefit of the school, and I willingly accept it.	2.69	0.81	Agree
My teaching load is more significant than most other teachers in our school because I have an excellent rating, meaning I attend my classes regularly.	2.18	1.01	Disagree
Details, "red tape," and required reports absorb too much of my time.	2.09	0.81	Disagree
Teachers in this school are expected to do an unreasonable amount of record-keeping and clerical work, as encouraged by the principal.	2.06	0.91	Disagree
Community demands upon the teachers' time are unreasonable, and the principal tries to mediate.	2.05	0.72	Disagree
My classes are used as a "dumping ground" for problem students, but I took it as a challenge because I believe they can learn and that it is fulfilling if they learn.	1.85	1.01	Disagree
Overall Result	2.54	0.24	Agree

Contrary to Norton (1999), who suggested that heavy workloads negatively impact teacher morale, the respondents found their workload reasonable, primarily when the principal provided encouragement and clear

explanations. This indicates that supportive leadership is crucial in maintaining teacher satisfaction despite workload demands.

Table 19 summarizes the morale of teachers, revealing that they strongly agreed on deriving satisfaction from teaching, ranking first with a mean of 3.56 (SD=0.5545). They also decided to enjoy rapport with fellow teachers (Mean=3.23; SD=0.6867) and the principal (Mean=2.97; SD=0.7656). Positive responses were also noted for teacher salary (Mean=2.63; SD=0.8084) and teacher load (Mean=2.54; SD=0.8247). The strong agreement on job satisfaction implies that teachers positively influence their students' lives. Millon (1981) noted that teacher morale can enhance student attitudes and learning. Macaindig (2012) emphasized that teaching requires mastery of subject matter, effective communication, and a passion for advancing knowledge.

Table 19. *Weighted mean ratings of the summary of teacher's morale as influenced by their school principals*

Teacher's Morale	Mean	SD	Descriptive Rating
Satisfaction with Teaching	3.56	0.55	Very Much Agree
Rapport Among Teachers	3.23	0.68	Agree
Teacher Rapport with Principal	2.97	0.76	Agree
Teacher Salary	2.63	0.80	Agree
Teacher Load	2.54	0.82	Agree

3.4 Teacher's Behavior as Influenced by the Supervisory Practices of their School Principals

Table 20 shows that teachers consistently practice classroom preparation and instruction. They always: give tests to evaluate learning (Mean=4.85; SD=0.4188); praise students for participation (Mean=4.79; SD=0.5062); explain grading systems (Mean=4.78; SD=0.5390); inform students about consultation times (Mean=4.73; SD=0.6229); provide diverse learning experiences (Mean=4.55; SD=0.7229); confer with parents or principals for problems (Mean=4.50; SD=0.6315); vary teaching methods (Mean=4.41; SD=0.6629); and scold misbehavior (Mean=3.92; SD=1.0733). The weighted mean is 4.47, with a standard deviation of 0.6774, indicating that these practices are consistently applied.

Table 20. *Weighted mean ratings of the perceived behaviors of the teachers as influenced by the supervisory practices of their principals in terms of classroom preparation and instruction*

Indicators	Mean	SD	Interpretation
I give tests and quizzes to evaluate learning effectiveness.	4.85	0.41	Always
I praise or give signs of approval to students who show exemplary work or who participate in class activities.	4.79	0.50	Always
I explain our rating and the grading system that she/he is using to students.	4.78	0.53	Always
I inform students of my availability for consultation or conferences.	4.73	0.62	Always
I provide various learning experiences adapted to the needs of the students to motivate the class and to learn the lesson quickly.	4.55	0.72	Always
I confer with the principal or with parents if there are problems.	4.50	0.63	Always
I vary my teaching methods and techniques to meet my students' learning needs.	4.41	0.66	Always
I provide time for consultation in case there are academic matters that we want to discuss.	4.34	0.76	Always
I scold the misbehavior of students and adequately correct them so that it will not bother other students.	3.92	1.07	Always
I tell jokes or anecdotes to motivate the students during the discussion.	3.87	0.83	Always
Overall Result	4.47	0.67	Always

Scaling: 4.21 - 5.00 = Always, 3.41 - 4.20 = Often, 2.61 - 3.40 = Sometimes, 1.00 - 1.80 = Often, 1.81 - 2.60 = Rarely

This reflects the positive impact of supervision on teaching quality, as Oliva and Pawlas (1997) noted, who emphasize supervisors' role in helping teachers improve their instruction. Adequate supervision influences these practices, which include using praise, explaining grading, offering consultation, adapting methods to student needs, and employing humor. Supervisory practices, therefore, significantly influence teacher behavior in classroom preparation and instruction.

Table 21 shows that teachers always visit their school library to stay updated on their subjects (Mean=4.42; SD=0.8128), attend seminars or conferences (Mean=4.35; SD=0.7705), and use the Internet for exploring new ideas (Mean=4.28; SD=1.0700). They often: attend professional organization meetings (Mean=4.10; SD=0.7674); buy educational books (Mean=3.88; SD=1.0187); read professional magazines (Mean=3.73; SD=0.9798); and attend graduate courses (Mean=3.44; SD=1.1661). They sometimes conduct research (Mean=2.79; SD=0.7916) and subscribe to newspapers (Mean=2.52; SD=0.7578) but never seek scholarships or present papers (Mean=1.67; SD=0.1428). The overall mean for Professional Growth Behavior is 3.52, described as "often."

This indicates that teachers actively pursue professional growth, influenced by their principals' supervisory practices. Visiting libraries, attending in-service training and workshops equip them with updated knowledge, supporting their professional development. Continuous education is crucial for improving teacher quality and, ultimately, student outcomes, as emphasized by Corpuz et al. (2012). Teachers must also take responsibility for their growth, while school administrators should ensure opportunities for further learning and professional development.

Table 21. *Weighted mean of the behavior of the teachers as influenced by the supervisory practices of their principals in terms of professional growth behavior*

Indicators	Mean	SD	Interpretation
I visit the school library to be updated on new ideas in my subject	4.42	0.81	Always
I attend seminars or work conferences for teachers.	4.35	0.77	Always
I use internet to explore new ideas and information	4.28	1.07	Always
I attend meetings or conventions of professional organizations for professional enhancement.	4.10	0.76	Often
I buy books on education for my professional advancement.	3.88	1.01	Often
I read professional magazines, journals, and other periodicals.	3.73	0.97	Often
I attend graduate courses for teachers during the summer term or the regular semester.	3.44	1.16	Often
I researched educational or other related fields.	2.79	0.79	Sometimes
I buy or subscribe to at least one daily newspaper.	2.52	0.75	Sometimes
I sought scholarship grants and presented papers at conferences.	1.67	1.14	Never
Overall Result	3.52	0.92	Often

Table 22 shows that respondents observe classroom preparation and instruction (Mean=4.47; SD=0.6774) and often engage in professional growth (Mean=3.52; SD=0.9278). These positive results indicate adequate supervision, reflecting the influence of principals' supervisory practices on teachers' behaviors. Mangotara (2013) also found that principals with high ratings in "observing classroom instruction" positively impacted teacher efficiency. Adequate supervision encourages teachers to be more responsible, collaborative, and productive, enhancing the overall quality of teaching and learning, as supported by Neagley and Evans (1987).

Table 22. *Weighted mean ratings of the summary of teachers' behaviors as influenced by the supervisory practices of the school principals*

Respondents' Behavior	Mean	SD	Descriptive Rating
Classroom Preparation and Instruction	4.47	0.67	Always
Professional Growth	3.52	0.92	Often

3.5 Relationship between the Perceived Supervisory Practices of School Principals and Teachers' Behavior

Table 23 presents the correlation analysis between school principals' supervisory practices and teacher morale, showing a significant positive relationship. The null hypothesis is rejected at the 0.05 significance level, confirming that principals' supervisory practices influence teacher morale. The Pearson correlation coefficient and t-test method were used to assess this relationship.

Table 23. *Hypothesis testing relationship between the perceived supervisory practices of school principals and teacher's morale*

Variables Correlated	Improving Relations with Teachers			Improving Teaching and Learning			Evaluating Teachers' Behavior		
	r	t-test	Interpretation	r	t-Test	Interpretation	r	t-Test	Interpretation
Teacher Rapport with Principal	0.27	4.71	Significant	0.27	4.71	Significant	0.27	4.71	Significant
Satisfaction with Teaching	0.25	4.34	Significant	0.25	4.34	Significant	0.25	4.34	Significant
Rapport Among Teachers	0.26	4.53	Significant	0.26	4.53	Significant	0.26	4.53	Significant
Teacher Salary	0.27	4.71	Significant	0.27	4.71	Significant	0.27	4.71	Significant
Teacher Load	0.28	4.90	Significant	0.28	4.90	Significant	0.28	4.90	Significant

This result supports the idea that principals impact teacher morale through their leadership and supervision. Studies by Rempel and Bently (1980) explain that teacher morale reflects the satisfaction of personal needs, which principals help nurture. Supervision, as noted by Neagley and Evans (1980), enhances curriculum, instruction, and learning, benefiting the entire school system. Supervision positively influences teacher outcomes, with direct feedback playing a crucial role in teacher development (Kilminster, 2000). This aligns with Barr et al. (2000) and Wile (1998), who emphasize that adequate supervision fosters an environment conducive to teaching and learning, combining technical proficiency, human relations, and leadership skills.

Table 24 shows a significant relationship between the school principals' supervisory practices and teachers' behavior in classroom preparation, instruction, and professional growth. The null hypothesis is rejected at the 0.05 significance level, indicating that supervisory practices influence teacher behavior. This suggests that the type of supervision employed by principals shapes teachers' actions, a point supported by Roque (1983), who emphasized that supervisory services impact the achievement of educational goals. Ricks and Jamerson (2000) also highlighted principals' challenges, indicating that their supervisory approach affects teacher performance and behavior. Thus, supervision, teacher morale, and effectiveness are closely linked.

Table 24. *Relationship between the perceived supervisory practices of school principal and teacher's behavior*

Variables Correlated	Classroom Preparation and Instruction			Professional Growth		
	r	t-Te	Interpretation	r	t-Test	Interpretation
Improving Relations with Teachers	0.23	3.97	Significant	0.24	4.15	Significant
Improving Teaching and Learning	0.22	3.79	Significant	0.24	4.15	Significant
Evaluating Teachers' Performance	0.23	3.97	Significant	0.24	4.15	Significant

Table 25 reveals a significant relationship between teacher morale and behavior, as shown by rejecting the null hypothesis at the 0.05 significance level. The Pearson correlation coefficient was used to establish this connection through t-test analysis. Villareal (1990) found that high-morale teachers tackle complex tasks confidently, persistently, and enthusiastically, even in challenging conditions. Hoy and Forsyth (1986) emphasized that teachers are key to enhancing instruction, requiring professional, intellectual, and social support. Zedepa (2003) introduced "auto supervision," suggesting that teachers' morale, fostered by adequate supervision, positively influences their behavior.

Table 25. *Hypothesis testing on the relationship between teachers' morale and behavior*

Variables Correlated	Classroom Preparation and Instruction			Professional Growth		
	r	t-Test	Interpretation	r	t-Test	Interpretation
Teacher Rapport with Principal	0.26	4.530	Significant	0.29	5.098	Significant
Satisfaction with Teaching	0.24	4.159	Significant	0.26	4.530	Significant
Rapport Among Teacher	0.25	4.355	Significant	0.27	4.717	Significant
Teacher Salary	0.26	4.530	Significant	0.28	4.907	Significant
Teacher Load	0.27	4.717	Significant	0.29	5.098	Significant

4.0 Conclusion

The study's findings underscore the need for principals to translate these insights into concrete actions that empower teachers and enhance the learning environment. For instance, principals can foster a "community of learners" by establishing regular collaborative sessions where teachers can share best practices, discuss pedagogical challenges, and receive peer support. Additionally, incorporating student-centered approaches into supervision, such as classroom observations focused on student engagement and feedback, can provide teachers with valuable insights into their impact on student learning. This shift from traditional evaluation to a more supportive and collaborative approach can empower teachers to take ownership of their professional development and contribute to a more positive and effective learning environment for all. This approach aligns with the modern perspective on supervision, where the focus shifts from control and evaluation to a supportive role to enhance teachers' awareness of their impact on student learning (Glickman et al., 1997; Nolan, 1997). The evolution of supervision has shifted from control and evaluation to a supportive role aimed at enhancing teachers' awareness of their impact on student learning (Glickman et al., 1997; Nolan, 1997). While traditional concerns remain relevant, modern supervision fosters understanding and collaboration among educators (Wiles & Bondi, 1996). Supervision is continuous rather than sporadic visits (Musaazi, 1982). This contemporary approach has become more democratic, emphasizing humanistic elements over custodial oversight (Neagley & Evans, 1980).

Principals can further strengthen their supervisory practices by implementing strategies that directly address teachers' concerns. For example, providing professional development opportunities that align with teachers' individual needs and interests can enhance their skills and boost morale. Creating a transparent and equitable system for addressing salary concerns and ensuring fair compensation can significantly contribute to teacher satisfaction. By actively engaging in these practical steps, principals can transform their supervisory role from a traditional oversight function to a dynamic force that empowers teachers and cultivates a thriving learning community.

5.0 Contributions of Authors

The author wrote the manuscript detailing the study's background, methodology, results, and discussion. They connected the findings to broader educational theories and the context of Lanao del Sur. Based on peer feedback, they revised the manuscript, refining the analysis, improving clarity, and strengthening the arguments with data.

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7.0 Conflict of Interests

The authors affirm that there are no conflicts of interest regarding the publication of this paper. This statement reinforces their dedication to transparency and ethical standards in research, ensuring that the findings and interpretations presented are solely based on objective analysis and are free from any influences that could compromise the integrity of the work. By making this declaration, the authors emphasize their commitment to maintaining professionalism and credibility in their scholarly contributions.

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Designing Library Spaces Based on College Students' Reading and Usage Habits

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Abstract. This study assessed college students' library utilization and reading habits at NORSU - Guihulngan Campus to propose improvements to its library space design. Despite the growing importance of libraries in fostering learning, limited research exists on how student preferences and habits influence library space design, particularly in rural academic settings. A descriptive research design was employed to address this gap, utilizing a structured questionnaire with three parts: demographic profile, reading habits, and preferred learning space attributes. Data were analyzed using the weighted mean to derive insights. The study revealed that most respondents were female, with business students dominating the sample, while agriculture, forestry, and fishery students were underrepresented. Most respondents had moderate library experience, with second-year students being the most frequent users and fourth-year students the least. The primary reasons for library use were research, studying lessons, and completing assignments, while Wi-Fi access was the least cited. Students preferred learning spaces emphasizing Access and Linkages, Uses and Activities, Comfort and Image, and Sociability, all critical for enhancing their reading habits. Respondents predominantly favored print books over digital devices and read at least twice a week, though primarily for academic purposes. The most preferred genres were adventure, informational texts, fantasy, myths, and legends, with personal enjoyment and school assignments as primary motivators for reading. Based on these findings, it is recommended that the library encourage a culture of reading by promoting print resources, fostering collaboration among library staff, teachers, and students, and integrating seamless access to resources through digital and physical platforms. Enhancing library spaces to align with students' preferences in comfort, accessibility, and sociability can further support their learning and reading engagement.

Keywords: Access and linkages; Comfort and image; Learning space; Library; and Reading habit.

1.0 Introduction

Modern technology has generated a great demand for a knowledgeable and informed population. Indeed, "with the fast pace and change of our society, reading is perhaps even more important" than ever before (Cohen, 2019). According to one expert, the need to read for knowledge and enrichment is no longer pressing; it is urgent. Technology has rendered the ability to read adequately unnecessary today. Modern devices generally need the capacity to read and follow instructions on terminal screens or in printed manuals and use language when saving and retrieving data. Accordingly, studying reading habits and the readabilities of today's generation may be judged desirable.

On December 3, 2019, the Programmed for International Student Assessment (PISA) released its assessment on reading comprehension, which was participated by nine countries. PISA is an international assessment measuring student reading, mathematical, and scientific literacy performance. The outcome demonstrates that the Philippines ranked bottom (Juan, 2019). "Reading proficiency is essential for a wide variety of human activities - from following instructions in a manual to finding out the five W's of the occasion. To join forces with others for a certain goal or transaction," the summary of the PISA 2018 results reads as cited by (Juan, 2019). Furthermore, (Juan, 2019) stated that "the country has the largest percentage of low performers in reading among socio-economically disadvantaged students."

As support to Instruction, the library contributes significantly to providing students with a comfortable reading space. Libraries are necessary at all academic institutions, regardless of their financial status. A library's study area, whether real or virtual, may significantly influence learning. Learning Spaces examines how student expectations affect such places, concepts, and learning activities and the use of technology as seen through the eyes of the individuals who construct learning environments: academics, technologists of education, librarians, and administrators. Technology has created unique learning environments by encouraging more meaningful connections through collaborative tools, videoconferencing with foreign experts, or offering virtual worlds for exploration. According to an architect, even if individuals are no longer required to visit libraries for knowledge, they will visit if the library is a "pleasant location." According to him, innovation in place design is called "place-making," it involves people in the community in design planning (Kent, 2013). The most important aspect is managing and programming the space. Great locations are defined by what people do and how they feel utilized and 'own' them. Since the mid-1990s, academic institutions have benefited from new, enlarged, refurbished, or redesigned buildings. Given current worries about the physical library's future and space requirements, it is critical to understand what improvements have been achieved in recent facility developments and what influence these enhancements have had on physical library use (Tonner, 2013).

The assessment of reading space requirements and reading habits prompted this study to evaluators-Guihulngan regarding space available since it was established for educational and research purposes. Sufficient rooms are available space-wise and in groups. This research provides results by designing learning environments that support learner autonomy and resemble authentic workspaces; students can effectively engage in self-directed learning. Learning environments are intended for home-like comfort, wayfinding, balance, valued behavior, openness, security, and welcomeness.

The NORSU-Guihulngan library occupies a small space that can only accommodate 70-80 students at a time. The library must address the increase in the student population's physical needs. Section VI- Physical Facilities of the Standards for Philippine Academic Libraries stipulates that "a. The academic library shall have adequate space and appropriate facilities accessible to the students, faculty, and other users. It shall be designed to allow for future rearrangement and expansion, b. The academic library shall have adequate space to accommodate its clientele's reading and research needs; to house the growing collections, the appropriate offices for staff, librarian's office, and storage space; and areas for special services such as electronic and audiovisual programs; c. The academic library shall have a seating capacity of not less than 15% of the total enrollment; d. The educational library facilities shall be adequate in size with proper lighting and ventilation and furnished with functional furniture and equipment to encourage maximum use and convenience for the clientele. Facilities for people with disabilities (PWD) shall be considered.

The connection between NORSU Guihulngan's reading habits and preferred reading space is critical to ensuring that the proposed library space design will make students feel, use, and own the place; thus, they will inevitably return and use the library as often as expected.

2.0 Methodology

2.1 Research Design

The study uses a quantitative research method that employs a descriptive survey questionnaire to accumulate the desired information and data needed for the study. Ardales (2008) states that this research design is appropriate for studies that aim to discover what prevails in the present conditions or relationships, held opinions and beliefs, processes and effects, and developing trends. Based on its results. It also attempts to establish the link between

variables, investigates the causes of occurrences, etc. This research methodology is appropriate for this study because it describes the current state of the NORSU-Guihulngan library. It is geared toward developing the library and learning spaces to offer a conducive and pleasant environment for library users.

2.2 Research Participants

The respondents of this research were the students of the NORSU-Guihulngan campus in the City of Guihulngan, Negros Oriental. Specifically, it consisted of six (6) colleges: the College of Teacher Education, the College of Business Administration, the College of Arts and Sciences, the College of Criminal Justice Education, the College of Agriculture and Forestry, and the College of Industrial Technology. Three hundred fifty students were selected to determine the data's authenticity. The researcher used the Slovin formula to get the sample size of the respondents from 2,760 students down to 350 respondents. Additionally, in getting the respondents per college, sampling assumptions were met by employing stratified random sampling to ensure proportional representation across academic disciplines and year levels.

Table 1. *Respondents of the study*

College	N	n
College of Arts and Sciences	220	28
College of Business Administration	857	109
College of Teacher Education	547	69
College of Criminal Justice Education	315	40
College of Agriculture, Forestry and Fishery	162	20
College of Industrial Technology	659	84
Total	2,760	350

2.3 Research Instrument

This study used two questionnaires to gather the data: a self-made survey and an adapted questionnaire by Santes (2018). Part I of the questionnaire outlines the respondents' demographic profile regarding sex, course, year level, and reason for using the library and technological profile. Part II dealt with their reading habits and covered their preferred format and time spent reading, frequency, means, chosen genre, and motivation. Respondents' preferred learning space regarding comfort and image, sociability uses, activities and access, and linkages comprised part III of the questionnaire. Instrument reliability was ensured through a pilot test, achieving a Cronbach's alpha of 0.85, indicating high internal consistency.

2.4 Data Gathering Procedure

The researcher sent a letter to the administrator of NORSU-Guihulngan Campus asking for approval to conduct a study; after the research, the instrument was validated and found to be reliable. The researcher then ran the survey questionnaires to the respondents in their respective classes and explained the questionnaire to ensure that the correct data was obtained.

2.5 Data Analysis

To analyze the data, the researchers used frequency and percentage to determine the demographic profile of the respondents. The researchers also used weighted mean or average mean to interpret the respondents' Reading Habits and the Preferred Reading Space Design. Pearson's R correlation was used to determine the significant relationships between Reading Habits and Preferred Learning Space. The Eta Squared and Spearman Rho Correlation were utilized to determine the association between Reading Habits and Profile of Respondents and Preferred Learning Space. Eta Squared Correlation was used when the variables were nominal and scale-like, like Sex, Department/College, Gadgets Used, and Reasons for Using the Library. Pearson's Correlation Coefficient of 0.2 was used as the minimum level for acceptance of an association. Eta Squared Correlation was also used in determining the associations between profiles with nominal variables such as Sex, College/Department, Reasons for Using the Library, and Technological Profile, specifically the Gadget Ownership, Correlated with Scale Reading Habits Variables such as Number of Preferred Format and Number of Motivators as well as with Preferred Learning Space. Pearson Rho was used when the variables were ordinal and scaled, such as hours spent per day Using the internet for school activities and hours spent per day Using the internet for personal activities.

2.6 Ethical Considerations

Ethical considerations were rigorously addressed. The study received approval from the institutional ethics review board, and informed consent was obtained from all participants. Confidentiality and anonymity were upheld throughout the research process.

3.0 Results and Discussion

3.1 Demographic Profile

Table 2 shows that 63.71 percent (223 respondents) were female, and only 36.29 percent (127) were male. The result reveals that male respondents dominated females. Gentile and McMillan (2015) observe that boys would read better if they had more male role models who read but that the preponderance of elementary school teachers is female. Lehr notes that "research conducted in the United States and Canada for almost a century has confirmed that sex differences, favoring females, do exist in reading performance, especially in the lower grades." However, he asserts that these differences are more cultural than gender-related and that it should be possible to "find ways to free our students from sex-role stereotypes that unnecessarily affect their academic performance" (Gentile & McMillan, 2015).

Table 2. Descriptive statistics of the demographic profile of the respondents (n= 350)

Sex	Frequency	Percentage (%)
Male	127	36.3
Female	223	63.7
Total	350	100

Table 3 displays that 31.14 percent (109) of respondents were from the College of Business Administration, and only 5.72 percent were from the College of Agriculture, Forestry, and Fisheries. The study results indicate that several responses were influenced by the business students and only a little by the agriculture, forestry, and fishery students. Soliman and Neel (2010) Concluded that medical students spend sufficient time reading medical pocketbooks and lecture handouts with less time spent on online sources. Most students reported problems in reading that medical educators need to address. While online sources are easily accessible and provide up-to-date information on patient management, they may not be the most efficient means for students to obtain critical information. However, students must be encouraged to use online sources to facilitate patient management and diagnose an illness in clinical ward rounds. Many students reported problems with reading. The main problem was the unclear sources of information about their patients. This finding can be attributed to the lack of students' skills to search and find the correct information. This issue must be enhanced in the first year of medical school to teach students how to be self-learners and use the available learning resources.

Table 3. Descriptive statistics of the department/college of the respondents (n=350)

Department/College	Frequency	Percentage (%)
Business Administration	109	31.1
Teachers Education	84	24.0
Arts and Sciences	69	19.7
Agriculture, Forestry, and Fisheries	28	8.00
Criminal Justice Education	20	5.72
Industrial Technology	40	11.4

Table 4 exhibits that 52 percent (182) of the respondents were from the second year, and only 8.29 percent (29) were from the fourth year. The result shows that most respondents already had enough experience using the library. Balan, S. et al. (2019) In their study regarding the academic level of respondents, the analysis shows that 42.4 % (106 respondents) were freshmen and 25.2 % (63 students) were sophomores. Respondents from the junior level represented 20.0% (50 students), and 12.4 % (31 respondents) were senior-level students.

Table 4. Descriptive statistics of the year level of the respondents (n=350)

Year Level	Frequency	Percentage (%)
First Year	42	12.0
Second Year	182	52.0
Third Year	97	27.7
Fourth Year	29	8.29

Table 5 shows that researching, studying the lessons, and doing assignments are the top reasons students use the library while using Wi-Fi was considered the only reason. The result shows that students used the library when they needed more references for the requirements and used it to learn more of what had been taught and required to do in class. Applegate (2009) believes that a well-functioning library "addresses [es] the whole range of student requirements and complements the overall campus space-use ecosystem" (p. 345). We identified common themes during several institutions' "ideal library space" visioning and interior design seminars. Students have various assignments and assignments, need varied spaces, furnishings, and tools. Despite all their computing gadgets, these amenities are still required. Beyond student participation, researchers have found that the four support institutions that provide academic services result in increased engagement (Cohen, 2019).

Table 5. *Descriptive statistics of the reasons for using the library*

Reasons	Number of Responses	Rank
Attend a program	24	9
Borrow/return materials	143	4
Do my assignment	207	3
Get help from library staff	52	6
Leisure reading	137	5
Research	221	1
Study my lesson	209	2
Socialize/meet with friends	37	7
Use the computer	25	8
Use the discussion room	2	10
Use the Wi-Fi	1	11

Table 6 exposes that 71.49 percent (321) of the respondents' gadgets were smartphones, and only 5.12 percent (23) were desktops. The result shows that most respondents used handy smartphones for their technological use, and some used more than one gadget. Cell phones are popular among American adults, especially those 65 and older (Madden & Zickuhr, 2011). About 85% of adults own cell phones. 76% of cell owners snapped photographs, and 72% of cell owners texted, two non-voice features generally popular among all mobile phone users. Desktop computers are most popular with individuals 35-65, with 69% of Gen X, 65% of Younger Boomers, and 64% of Older Boomers having these devices. Millennials are the only generation more likely to own a laptop computer or netbook than a desktop: 70% have laptops, while 57% have desktops.

Table 6. *Descriptive statistics of the respondents' technological profile in terms of gadget ownership*

Gadget	Frequency	Percentage (%)
Desktop	23	5.12
Smartphone	321	71.4
Tablet/Ipad	28	6.24
Laptop	77	17.1

Table 7 exhibits that 78.29 percent (274) of the respondents spent 1 -3 hours per day using an internet connection for school activities, and only 4 percent (14) spent more than 8 hours. The result indicates that the university trained the respondents to learn through the Internet. Subramanian and Gomathi (2019) emphasized the time used to read the book & other reading materials. 215(56.57%) of the respondents spent less than 1 hour for reading, 116(30.52%) respondents spent 1-3 hours for reading, and 49(12.89%) respondents spent 3-6 hours for reading.

Table 7. *Descriptive statistics of the respondents' technological profile in terms of hours spent per day in using internet connection for school activities*

Hours Spent Per Day	Frequency	Percentage (%)
1 - 3 Hours	274	78.2
4 - 7 Hours	62	17.7
8 hours or more	14	4.00

Table 8 shows that 68.00 percent (238) of the respondents spent 1 -3 hours per day using an internet connection for personal activities, and only 12.86 percent (45) spent 8 hours or more. The result indicates that the respondents spent more or less the same time on personal and school activities. The technological profile of the respondents shows that they were using portable gadgets that had easy access to the Internet. Still, the time spent on it was combined with school and personal activities, which may affect their time for studying and doing requirements

for school. Hastings and Henry (2006) reveal that more than half of respondents (56%) spend less than an hour a day reading, and 13% say they do not read. The results reveal that most college students (66.86%) have a positive attitude towards reading and spend an average of 1.90 (i.e., 1:54) hours daily on academic and non-academic assignments. It is a positive indicator that students should develop a timetable to spend time on different print and electronic media activities like watching television, listening to music, playing video games, etc. It should always pay its share on academic and non-academic reading without any fall to keep its reading habit alive.

Table 8. *Descriptive statistics of the respondents' technological profile in terms of hours spent per day using internet connection for personal activities*

Hours Spent Per Day	Frequency	Percentage (%)
1 – 3 Hours	238	68.0
4 – 7 Hours	67	19.1
8 hours or more	45	12.8

3.2 The Reading Habits of Respondents

The reading habits considered in the study were the preferred format, time spent in reading, means of reading, preferred genre, frequency, and motivation. Table 9 shows that 22.38 percent (243) of the respondents preferred print books as their reading materials, followed by magazines (18.88 percent) and newspapers (18.60 percent). Moreover, only 4.88 percent preferred e-Newspaper. The result shows that many respondents considered the print book their best choice. On average, the respondents had three preferred formats. The University of California (2011) Students were asked if they still believed "that print books and print periodicals have something to contribute, and if so, what?" Three hundred ninety-four University of Toronto undergraduates answered their poll. The findings indicated that print provided superior reliability, showing a cautious attitude toward online sources and belief in using printed books to produce "high-quality work." Online sources were almost always used to help do tasks fast and efficiently. Additionally, students claimed that reading printed material was simpler than reading digitally. While many considered online journals acceptable, they "believed that novels were too lengthy to read online." Furthermore, according to a Malaysian Reading Profile survey, Malaysians aged ten and up read eight to twelve books yearly (National Library of Malaysia, 2010). In 2016, 78 percent of Malaysians read often selected newspapers, 3% read magazines, 3% read books, and 1.6 percent read comics (Borneo Post Online, 2017). Malaysians with diverse reading tastes are displayed. Much research has been carried out to look at the relationship between library use, student learning, and student involvement.

Table 9. *Descriptive statistics of the preferred format of the respondents*

Choices	Frequency	Percentage (%)
Printed books	243	22.3
Magazines	205	18.8
Newspapers	202	18.6
Printed journals	112	10.3
eBooks	137	12.6
eMagazines	60	5.52
eNewspaper	53	4.88
eJournals	74	6.81

Table 10 reveals that 37.71 percent (132) of the respondents Read At Least 2 Times Per Week, and only 0.30 percent (1) did not read at all. Results signify that more respondents spent less time reading. According to Kirmizi (2010), students should try to allocate time to reading during the day. The amount of time that students devote to reading may be monitored by the family and teachers. Students who give little time to reading at home should be encouraged to spend more time reading.

Table 10. *Descriptive statistics of the time spent in reading*

Preferred Time	Mean	Percentage (%)
Read Every Day of The Week	104	29.7
Read At Least 4 Times Per Week	80	22.8
Read At Least 2 Times Per Week	132	37.7
Only Read Because Someone Makes the Respondent Read	26	7.42
Hate Reading and Read as Little as Possible	7	2.00
Don't Read at All	1	0.30

Table 11 presents that 59.43 percent (208) of the respondents Read from a Print book, and only 2.86 percent (10) Read from A Tablet/iPad. The result shows that most respondents preferred reading material that could be clearly read and commonly found in the library. Students also stated that reading and engaging with print was more manageable than reading electronically; many found reading online journals acceptable but “thought that books were too long to be read online.” (Dilevko & Gottlie, 2012).

Table 11. *Descriptive statistics of the means of reading*

Preference	Frequency	Percentage (%)
Reading from a print book	208	59.4
Reading from the e-reader device	14	4.00
Reading from a computer	29	8.28
Reading from iPhone/smartphone/iPod	89	25.4
Reading from a tablet/iPad	10	2.86

As shown in Table 12, the most Preferred Genre of the respondents was Adventure, followed by Informational and Fantasy, Myths, and Legends. Horror was the least Preferred Genre. This means the respondents were most interested in the genre that provided excitement, which usually involved danger and unknown risk. In Grant's (2011) study, female students with poor reading skills preferred reading fiction books. Despite gender differences in genre preferences and adult extracurricular reading, there were no gender preferences in the measured cognitive skills. The result may encourage purchasing more reading genres at home and within the school system. According to Shaffer (2015), adolescents feel a sense of independence when choosing their reading materials. He discovered boys read science fiction, fantasy, sports-related, and war/spy stories more often than girls. There is no differential gain from reading in one genre over another. Most importantly, children will benefit from professionals learning that the types of materials they read do not differentially affect the development of their reading skills.

Table 12. *Descriptive statistics of the preferred genre*

Books	Actual Rank
Adventure	1
Autobiographies	9
Biographies	10
Fantasy, Myths and Legends	3
Historical fiction	4
Horror	13
Informational	2
Science fiction	7
Mysteries	6
Poetry	5
Realistic fiction	8
Sports	12
Magazines and Newspapers	11

Table 13 displays that 34.86 percent (122) of the respondents read 1-2 times per week of the materials not required in their class, and only 2.57 (9) did not read. The result suggests that the respondents seldom read their favorite readings and read at least three times per week. They also preferred exciting risk books that were seldom read. The school assignments and information need to motivate them to do the readings. Tella and Akande (2007) disclose that most students (53.3%) read between 1 and 2 hours daily in Botswana. The Department of Education, Hong Kong (2001) states that students read weekly for two or more hours.

Table 13. *Descriptive statistics of the frequency (not assigned in school)*

Choices	Frequency	Percentage (%)
Read Everyday	103	29.4
1-2 Times Per Week	122	34.8
3-4 Times Per Week	75	21.4
5-6 Times Per Week	41	11.7
Not At All	9	2.57

Table 14 displays that the respondents were motivated mainly by their reading habits, school assignments (26.71 percent), need for information for themselves personally (24.28 percent), and enjoyment (21.41 percent). Moreover, they were least motivated by the recommendation from a Friend (8.40 percent). The result shows that the respondents' reading habits were inspired by the class requirements and the information they needed, and they enjoyed what they read.

Table 14. *Descriptive statistics of motivation of the respondents*

Choices	Frequency	Percentage (%)
School Assignments	242	26.7
Recommendation From a Friend	76	8.40
Need For Information for Oneself Personally	220	24.2
Enjoyment	194	21.4
Relaxation	174	19.2

Generally, the respondents preferred three reading materials with print books as their most selected and read them twice per week only. Their preferred genre was an adventure but seldom read-only. Being a requirement, the need for information and being enjoyed were the respondents' motivations in reading. According to Adkins and Brendler (2015), "Teenagers do better at reading when motivated to read. The International Student Assessment (PISA) program assesses reading literacy for 15-year-olds in over 70 countries worldwide and includes questions that explore the relationships between motivation and reading. Country-level results indicate that developing countries have lower reading scores than developed countries. However, they also suggest that many developing countries are more motivated to read and spend more time reading than students in developed countries. These results indicate that the ideal role for libraries is to ensure students' motivation to read through the provision of a variety of materials, a supportive environment for literacy and reading conversations, and encouraging student autonomy in making their reading choices.

The respondents' Reading Habits were rated based on the number and time they were allotted. Table 15 illustrates the different reading habits of the respondents and the rubrics for rating the extent of their reading habits, as well as the qualitative description.

Table 15. *The rating and qualitative description on the reading habits of respondents*

Reading Habits						Rating	Qualitative Description
Number of Preferred Format	Time Spent in Reading	Means of Reading	Number of Preferred Genre	Frequency	Number of Motivators		
7-8	1	5	11-13	5	5	5	Excellent
5-6	2	4	8-10	4	4	4	Best
3-4	3	3	5-7	3	3	3	Better
1-2	4	2	2-4	2	2	2	Fair
0	5-6	1	0-1	1	1	1	Poor

Table 16 shows that the respondents had the best reading habits in terms of time spent reading and frequency, as shown by the weighted mean of 3.69 and 3.77, respectively. They spent at least 3-4 times per week reading, as revealed in Table 3.2.2, and Read 5-6 Times Per Week for materials Not Assigned in School (Frequency), as shown in Table 3.2.5. This means that the respondents had allotted ample time to enhance their reading habits on materials both required and not required by the school. On the other hand, they were fair only in the Means of Reading and Motivation as presented by the Weighted Means of 2.07 and 2.55, respectively. Most were limited to reading from printed books and iPhones, smartphones, and iPods, as illustrated in Table 16. Furthermore, the majority were motivated only by school assignments and the need for information for themselves personally, as cited in Table 2.6. This connotes that the respondents' reading habits were limited regarding means of reading and motivation. Generally, the respondents had better reading habits, as demonstrated by the mean weighted mean of 2.95. This implies that the library clients have allotted enough time and read enough preferred reading materials.

Table 16. Grand mean of reading habits

Attributes	Mean	Description
1. Preferred Format (Printed books, Magazines, News Papers, Print Journals, e-books, e-newspapers, ejournals)	2.83	Better
2. Time Spent in Reading (Read Every Day of The Week, at least 4 Times Per Week, at least 2 Times Per Week,	3.69	Best
3. Only Read Because Someone Makes the Respondent Read, Hate Reading and Read as Little as Possible and Don't Read at All	2.07	Fair
4. Means of Reading (Reading from a print book, e-reader device, a computer, from iPhone/ smartphone/iPod, a tablet/iPad	2.79	Better
5. Preferred Genre (Adventure, Autobiographies, Biographies, Fantasy, Myths and Legends, Historical fiction, Horror, Informational, Science fiction, Mysteries, Poetry, Realistic fiction, Sports, Magazines and Newspapers)	3.77	Best
6. Frequency (Not Assigned in School - Read Every day, 5-6 Times Per Week, 3-4 Times Per Week, 1-2 times per week, not at all (School Assignments,	2.55	Fair
7. Motivators (Recommendation from A Friend, Need for Information for Oneself Personally, Enjoyment, Relaxation	2.95	Better

Scale: 4.21-5.00 (Excellent), 3.41-4.20 (Best), 2.61-3.40 (Better), 1.81-2.60 (Fair), 1.00-1.80 (Poor)

3.3 Preferred Learning Space

The preferred learning spaces considered in the study were comfort and image, sociability, uses and activities, and access and linkages. Table 17 shows that the respondents considered the comfort and image of the reading space to be very important, as evidenced by the Mean of Weighted Mean of 4.01. These were mainly related to room temperature and aesthetic appearance, as proven by the weighted mean of 4.20 and 4.07, respectively. However, they preferred the Most Important, the Cleanliness and Amount of Light, as presented by the Weighted Means of 4.56 and 4.22, respectively. The result shows that the respondents were keener on the relief and facsimile of the reading space, precisely its degree of coldness and beautiful image. According to Kent (2013), innovative library space should include the following characteristics: abundant, flexible learning space based on fluid design principles; welcoming, lively, and culturally inclusive atmosphere; a place to study from beginning to end: consuming, creating, generating, and sharing new information; a center of discovery and inquiry with equitable access to print, digital, and multimedia collections. These characteristics will: a) encourage readers to acquire a love of books and reading and develop into critical thinkers. b) enable collaboration between library staff, instructors, and students to search for, use, share, and create information; c) give seamless access to information resources, guidance, and assistance for the classroom, home, and mobile devices. Twenty-four hours a day; d) strengthen the connection between home and school (Sullivan, 2011).

Table 17. Comfort and image

Attributes	Mean	Description
Aesthetic Appearance	4.09	Very Important
Cleanliness	4.56	Most Important
Room Temperature	4.20	Very Important
Color of the Wall	3.67	Very Important
Color of the Furniture	3.53	Very Important
Amount of Light	4.22	Most Important
Noise Level	4.07	Very Important
Furniture Arrangement	3.95	Very Important
Lay-out Quality (space between furniture; section & shelf arrangement)	4.04	Very Important
Stunning Entrance with Ornamental Plants	3.78	Very Important
Mean	4.01	Very Important

Scale: 4.21-5.00 (Most Important), 3.41-4.20 (Very Important), 2.61-3.40 (Important), 1.81-2.60 (Less Important), 1.00-1.80 (Not Important)

Table 18 shows that the respondents' preferred sociability is very important in the learning space, as exhibited by the Mean of Weighted Mean of 3.90. Specifically, they chose the Most Important Space for Individual Study, Flexible Reading Area, and Space for Group Work, as demonstrated by the Weighted Means of 4.34, 4.26, and 4.24, respectively. They particularly preferred Very Important Discussion Room, Collaborative Rooms with LCD Projectors & Computer, and Ease of Interaction as shown by the Weighted Means of 4.12, 4.01 and 3.93. Moreover, they preferred Important the Café (Resto inside the library), as exhibited by the Weighted Mean of 3.09. This result signifies that the respondents preferred Sociability as Very Important in Learning Space, emphasizing individual adjustable space designed for group activities and conference individuals to act upon one another. Sullivan (2013),

a library must be designed as a critical, stimulating, and inviting environment that will benefit teaching and learning in the school when adequately staffed and resourced. A how-to manual for creating creative school library spaces: a) When creating a library space for educational purposes, the design approach should incorporate a strategy for obtaining information and guidance. b) Critical learning spaces within an innovative library learning environment; explore incorporating learning spaces into the library: quiet place - to contemplate, read, and study; collaboration space - to talk, brainstorm, share, and tell stories; presentation space - to present, share, and celebrate; breakout space - to investigate, create, practice, and share; maker space - to experiment, play, and design.

Table 18. Sociability

Attributes	Mean	Description
Space for Group Work	4.24	Most Important
Space for Individual Study	4.34	Most Important
Ease of Interaction	3.93	Very Important
Adjustable Furniture	3.67	Very Important
Collaborative Rooms with LCD Projectors and Computer	4.01	Very Important
Flexible Reading Area	4.26	Most Important
Discussion Rooms	4.12	Very Important
Café (Resto inside the library)	3.09	Important
Office space for student organization	3.68	Very Important
Maker Space	3.69	Very Important
Mean	3.90	Very Important

Table 19 shows that the respondents' preferred uses and activities are very important in the learning space, as shown by the Mean of Weighted Mean of 4.03. Specifically, they chose the Most Important Quiet Study Area and Computer Section With 20 to 50 units as revealed by the Weighted Means of 4.42 and 4.25, respectively. In addition, they preferred the Discussion Room and Large Table with Comfortable Chairs, which are very important, as displayed by the Weighted Means of 4.06 and 4.02, respectively. The result shows that the respondents regarded uses and activities, particularly a conference room with a sizable table and comfy chairs. Most importantly, the respondents preferred a calm study area with highly accessible computer units. Horizon report (2017): In interviews, the authors discovered that 77% of architects and 50% of librarians valued flexibility, meaning rooms are moveable and adaptable. One objective was to serve a range of learning requirements. More than 80% of participants mentioned that new library facilities were designed to assist academic learning activities, such as cooperation, individual study, and point-of-need services.

Table 19. Uses and activities

Attributes	Mean	Description
Adjustable Furniture and Equipment	3.88	Very Important
Comfortable Furniture	3.99	Very Important
Individual Carrels	3.86	Very Important
Small tables with comfortable chairs (2 and 4 seaters)	3.96	Very Important
Large tables with comfortable chairs (5 to 10 seaters)	4.02	Very Important
Lecture Room (10 users)	4.00	Very Important
Discussion Room	4.06	Very Important
Archives and museums (art galleries, etc.)	3.82	Very Important
Quiet Study Area	4.42	Most Important
Computer Section with 20 to 50 units	4.25	Most Important
Mean	4.03	Very Important

Table 20 shows that the respondents preferred access and linkages as very important in the learning space, as shown by the Mean of Weighted Mean of 4.04. These were mainly on the Accessibility to Librarian's Office and Cleared and Readable Signage posted on Walls/Shelves as exhibited by the Weighted Means of 4.17 and 4.09, respectively. Specifically, the Most Important for them was the Accessibility to Library Materials and Comfort Rooms, as proven by the Weighted Means of 4.39 and 4.30, respectively. The result indicates that the respondents considered the Accessibility and linkages in the learning space very important, especially their easy accessibility to the librarian and easy reading on the signs posted in the library. Most Important for them was the easy access to the materials they needed in the library and their necessities. Gullikson and Meyer (2016) found the pupils to sit alone. Additionally, 60% of students who sat together worked collaboratively, whereas 40% did not. Two-thirds of the library was intended to encourage collaboration. Our previous calculations underestimated the amount of

space required for collaboration. Because most furniture is mobile, individuals can easily modify a collaborative environment to meet their own needs; they can break apart tables, pull chairs from a group cluster, or use mobile whiteboards to create a room on the fly. In the future, student needs and behaviors could change, and again, the flexibility of this space would likely minimize the impact of this change.

Table 20. *Access and linkages*

Attributes	Mean	Description
Accessibility to Circulation Counter	4.01	Very Important
Accessibility to comfort rooms	4.30	Most Important
Accessibility to library materials	4.39	Most Important
Accessibility to the librarian's office	4.17	Very Important
Movable partition	3.67	Very Important
Collaborative spaces	3.98	Very Important
Mobile phone zone	3.78	Very Important
Lobby/lounge area	3.96	Very Important
Clear and readable signage posted on walls/shelves	4.09	Very Important
Crowdedness (distance of furniture and equipment)	4.03	Very Important
Mean	4.04	Very Important

Generally, the respondents preferred Access and Linkages, Uses and Activities, Comfort and Image, and Sociability as Very Important in a learning space, as displayed in Table 21. The result indicates that the essential attributes of the respondents' needs in a learning space were imperative to help them develop or improve their reading habits.

Table 21. *Summary of respondents' preferences in reading space*

Particular	Mean	Description
Comfort and image	4.01	Very Important
Sociability	3.90	Very Important
Uses and activities	4.03	Very Important
Access and linkages	4.04	Very Important
Mean	4.00	Very Important

3.4 Relationship Between Variables

The relationship between reading habits and preferred learning space attributes was tested using Pearson R and Eta Correlation. Table 22 shows that Reading Habits had little correlation with Preferred Learning Space, as exhibited by the Pearson Correlation of 0.149, but the correlation is significant at the 0.05 level. The result shows that the relationship between reading habits and preferred learning space exists, though it is negligible.

Table 22. *Correlation between reading habits and preferred reading space*

Correlation	Preferred Learning Space
Reading Habits	
Pearson Correlation	.149**
P-Value	.005
N	350

** . Correlation is significant at the 0.01 level (2-tailed).

The relationship between reading habits, preferred learning space attributes, and demographic profile of the respondents was tested using the ETA, Spearman Rho, and Pearson R Correlations. Table 23 shows no Significant Association between Profile and Reading Habits, though the correlation coefficient ranged from 0.005 to 0.064, which means no to negligible association. No Significant Association was also observed between Profile and Preferred Learning Space, though the correlation coefficient ranged from 0.010 to 0.092, which means no to negligible association. The result indicates that the students' profiles have nothing to do with reading habits and the preferred learning space.

However, their Reading Habits had a significant association with their Preferred Learning Space, as reflected by the P-value of 0.005. However, the association was negligible, as evidenced by the correlation coefficient of 0.149. The result shows that the student's reading habits were related to the preferred learning space, though it was insignificant.

Table 23. *Correlation between profile, reading habits, and preferred learning space of students*

Demographic Profile	Reading Habits		Preferred Learning Space	
	P-Value	Correlation Coefficient	P-Value	Correlation Coefficient
Sex	$\eta = .187 \#$	$\eta^2 = .035_2$	$\eta = .139 \#$	$\eta^2 = .019_2$
College/ Department	$\eta = .069 \#$	$\eta^2 = .005_1$	$\eta = .132 \#$	$\eta^2 = .017_2$
Year Level	$P = .233 \#$	$R = -.064_2$	$P = .085 \#$	$R = .092_2$
Reasons for using The Library	$\eta = .177 \#$	$\eta^2 = .031_2$	$\eta = .099 \#$	$\eta^2 = .010_2$
Gadgets Used	$\eta = .151 \#$	$\eta^2 = .023_2$	$\eta = .159 \#$	$\eta^2 = .025_2$
Hours Spent in Using Internet For School Activities	$P = .463 \#$	$R = .039_2$	$P = .073 \#$	$R = .096_2$
Hours Spent Using Internet for Personal Activities	$P = .484 \#$	$R = .038_2$	$P = .454 \#$	$R = .040_2$
Preferred Learning Space	$P = .005 \#$	$R = .149_2$		

3.5 Proposed Library Space Design

Negros Oriental State University-Guihulngan Campus library proposed a space design plan to improve physical space facilities and services, enhance the flexible learning space, and support various learning styles. The library designs that can attract readers, a welcoming place, available staff, and updated resources. It aims to provide reading materials, exact facilities, and services to students, teachers, and other researchers to enhance their reading habits. In planning the library space design, the four preferred learning space attributes should be considered: access and linkages, uses and activities, comfort and image, and sociability as very important to adopt the CHED Minimum Requirements for Libraries HEIs to meet the needs of the users efficiently.

Based on the survey conducted by the researcher, the respondents preferred access and Links as being very important in the learning space and the highest among the four characteristics that create desirability. These were mainly on the Accessibility to Library Materials and comfort rooms as the most important for them for their necessities. The updated and distinct collection of reading materials can motivate students' reading habits using the library learning spaces. Accessibility to comfort rooms, especially for people with disabilities (PWD), emergency exits, fire extinguishers, built-in emergency lights, and other facilities necessary and required by the National Building Code of the Philippines is provided, as mandated by the CHED Minimum Requirements for Libraries of HEIs.

The respondents considered Uses and Activities very important in the learning space; they liked the quiet study area and computer section with 20 to 50 units. The respondents regarded services and activities, particularly a conference room with a sizable table and cozy chairs. Most importantly, the respondents preferred a calm study area with highly accessible computer units. The size of the library is adequate, with proper lighting and ventilation, and it is furnished with functional furniture and equipment to encourage its maximum use and convenience for the clientele, as required by CHED Minimum Requirements for Libraries of HEIs.

The respondents preferred the Comfort and Image of the learning space, as well as the cleanliness and amount of light. The result shows that the respondents were keener on the learning space's relief and facsimile, exactly its degree of coldness and beautiful image. Comfort and appearance have a substantial impact on library use. The overall ambiance is significant in creating a more welcoming and pleasant environment. A library is made with a grand entrance to signify its importance in inspiring pride in students' reading habits. The CHED Minimum Requirements for Libraries of HEIs state that adequate space and appropriate facilities are accessible to the students, faculty, and other users. Future growth of the library must be considered while designing the interior – spaces for workers, librarians, and storage. Special services areas must be offered as well. Likewise, the respondents' preferred social ability is essential in learning. Specifically, they chose the space for individual study, flexible reading area, and room for group work. The respondent's preferred sociability is very important in reading the play, emphasizing a personal adjustable space for group activities and a conference where individuals can act upon one another. There is no ideal learning space regarding sociability; it is a student's choice of where to stay. Some students wish for seclusion, while others need social involvement. Students like having time to be alone and in a serene environment. They want to establish relationships with other students; an excellent site to see and meet each other is also in the mix. The proposed space design plan accommodates a seating capacity of 5% of the total enrollment, as stipulated in the CHED Minimum Requirements for Libraries of HEIs.

Indeed, here is a breakdown of budgetary requirements for the proposed library space design: reading tables, chair steel chairs, an audio-visual center, durable storage steel bookshelf, steel magazine shelf, computers, tablets, television smart, office tables with chairs, counter desk, touch screen bulletin board, file cabinets steel, photocopy machine, printers, sofa set, and others. Besides, the library space in the new normal is designed to figure out how to enforce social-distancing policies in an open area, such as installing protective barriers, space for hand washing/sanitation, and implementing procedures to maximize the safety of staff and customers. Furthermore, the library services offer valuable resources and support to enhance students' reading habits. Onsite and Online services are provided. The Onsite services are as follows: a) Reference Services, which Help customers locate information and resources to meet their informational needs; b) Circulation Services: Lending and managing library materials to customers, ensuring that library users can borrow, renew, and return items efficiently; c) Internet Research Services: Assisting customers with accessing and utilizing online resources effectively; d) Audio-Visual Services: Accessing various multimedia resources and technologies to support learning, research, and entertainment; e) Study Spaces: Supporting learning, research, and academics among customers; f) Library Orientation & Instruction Services: Conducting library tours and orientations for new students, faculty, and staff to familiarize them with library facilities, resources, and services; and g) design instructional sessions, workshops, and tutorials focusing on database searching and accessing electronic databases (e-books).

The Online Services are as follows: a) Electronic Document Delivery Services: Customers can request and receive documents in electronic format and access materials such as articles, book chapters, reports, and other documents that are not readily available in the library's physical collection; b) Access to Electronic Databases Services: Customers can have digital access to a wide range of electronic resources, including eBooks, scholarly journals, databases, and digital archives.

Additionally, the Library Reading Program offers various initiatives to foster a culture of reading and continuous improvement among students and faculty, such as: a) Faculty Author Showcases: Showcase books, articles, and other scholarly works authored by faculty members through exhibitions, displays, or virtual platforms. This program celebrates faculty achievements and promotes awareness of research conducted within the academic community; b) Research Reading Groups: Promote student engagement with available reading materials in the library for their research activities through participation in research reading groups. Encourage discussions on research methodologies, sharing insights on specific topics, and evaluating sources; and c) Library Extension Program: To assist other schools and communities in organizing, cataloging, and orienting staff about library rules and procedures.

In conclusion, the design of library spaces for college students plays a crucial role in shaping their reading habits and overall academic experience. A well-designed library space should provide access to resources and create an environment conducive to study, research, collaboration, and personal enrichment. By incorporating elements such as comfortable study areas, flexible seating arrangements, designated quiet zones, modern technology infrastructure, and interactive learning spaces, libraries can cater to college students' diverse needs and preferences. Furthermore, a thoughtful layout and design can encourage students to engage with library resources, foster a sense of community, and promote a culture of lifelong learning. Additionally, the library should consider incorporating sustainable and environmentally friendly features into their design to align with broader campus sustainability initiatives. Ultimately, the proposed library space design should prioritize student engagement, accessibility, and well-being, aiming to enhance the overall library experience and contribute to the development of strong reading habits among college students.

4.0 Conclusion

Based on the findings cited above, the following conclusions are drawn: The study discloses that the respondents were dominated by females, mostly business students, with enough experience using the library. The majority used handy smartphones for their technology use, and the library is where they need more references for the requirements and a place to learn more about what has been taught and required to do in class. The respondents allotted the same time daily to access the Internet for school and personal activities. Most respondents liked to read in print, such as books, at least twice a week, and their favorite genres were informative, fantasy, myths, and legends, and they wanted to read them as printed books. They preferred Access and Linkages, Uses and Activities, Comfort and Image, and Sociability as very important in a learning space to help them develop or improve their

reading habits. There is a significant relationship between the respondents' Reading Habits and Preferred Learning Space. There is no significant relationship between the respondent's profile and reading habits and their preferred learning space. However, a negligible considerable relationship exists between the respondent's reading habit and select learning spaces. There is a need to design various learning spaces in the library to motivate students to read.

In conclusion, the findings underscore the importance of the library as a vital resource for supporting students' academic endeavors and fostering a conducive environment for reading and learning. By understanding and addressing the preferences and needs of students, particularly regarding access to resources and suitable learning spaces, the library can effectively promote and encourage a culture of reading among its patrons. Based on the findings and conclusions drawn, the following recommendations were suggested to enhance the student's reading habits: the library management may orient/reorient students to prioritize their time doing activities required by their class rather than for their actions. The library must develop a curriculum-based collection and recreational reading materials in print format. The reading habits of the students may improve if the library management initiates a system that can make the library materials highly accessible to students in a quiet, calm, and well-lighted study area with clean, comfortable rooms. Moreover, to develop the students' reading habits well, the library must provide enough space to cater to the various learning styles of the respondents. Moreover, we must develop a well-planned library space to enhance students' reading habits.

In conclusion, the findings and recommendations underscore the critical role of the library environment in fostering and enhancing students' reading habits. Prioritizing time allocation towards academic activities, developing a comprehensive collection of curriculum-based and recreational reading materials, and ensuring high accessibility to library resources in conducive study areas are key initiatives that can positively impact students' reading behaviors. Moreover, acknowledging and accommodating students' diverse learning styles through adequate space provision is essential. Overall, developing a well-planned library space geared towards promoting and nurturing students' reading habits is crucial for supporting their academic success and lifelong learning journey.

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The authors reviewed, wrote, and approved the final work.

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7.0 Conflict of Interest

There is no conflict of interest.

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Localized E-Waste Recycling Framework for General Santos City: A Circular Economy Approach

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Abstract. The global electronic waste (e-waste) challenge is particularly acute in urbanized cities like General Santos City, Philippines, due to inadequate infrastructure, weak legal frameworks, and a reliance on informal recycling practices. Despite global advancements in recycling technologies, localized, context-specific solutions for e-waste management remain a significant gap. This study utilizes Principal Component Analysis (PCA) and Semi-Partial Correlation Coefficients (SPCC) to examine e-waste categories and their recycling implications. PCA identifies Factor 1, including Temperature Exchange Equipment (TEE), Screens and monitors (S&M), and Small ICT devices (SICT), explaining 50.24% of the variance (eigenvalue = 3.014), driven by widespread ownership and common disposal patterns. Factor 2 (eigenvalue = 1.091) accounts for 18.18% of the variance, highlighting challenges in disposing of Large Electrical Equipment (LEE) and Lamps. The remaining factors (eigenvalues 0.618–0.266) emphasize the need for targeted recycling for Small Electrical Equipment (SEE) and emerging categories like medical devices, drones, and EV batteries. SPCC analysis further refines these findings, revealing a strong correlation ($r = 0.509$, $p < 0.001$) between TEE and S&M, suggesting that clustering these categories could optimize collection efforts. Moderate correlations were also found: ($r = 0.419$, $p < 0.001$) between SEE and LEE and ($r = 0.395$, $p < 0.001$) between SEE and SICT, indicating that material types and recycling convenience influence disposal practices. The weak correlation between Lamps and other categories ($r = 0.067$, $p > 0.05$) underscores the urgent need for specialized recycling solutions and establishing policy-driven collection points in high-traffic areas. This study strengthens e-waste management theory and provides a practical framework for enhancing collection systems, processing, and recycling systems, data monitoring and formalization of urban mining, and institutional mechanisms within a circular economy.

Keywords: Collection system; Data monitoring; Institutional mechanisms; Processing systems; Urban mining formalization.

1.0 Introduction

The evolution of information technology has made online communication indispensable for households, businesses, governments, schools, and religious organizations (O'Leary, 2020), revolutionizing interactions across cultures and societies (Borthakur & Singh, 2022). However, this digital transformation raises concerns over the growing use of Electrical and Electronic Equipment (EEE) and the increasing generation of e-waste (Forti et al., 2020). 2019 global e-waste generation reached 53.6 million metric tons, with only 17.4% adequately recycled. To visualize this, imagine 4.5 million garbage trucks filled with discarded electronics, enough to stretch halfway around the Earth. If piled to one meter, this e-waste would cover 53.6 square kilometers—roughly the size of Manhattan, New York, San Juan City, Metro Manila, or nearly half of Boracay Island. E-waste, accounting for just two percent of global solid waste, disproportionately contributes to hazardous waste in landfills, posing serious

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environmental and health risks (DENR, 2023). With annual growth of 3-5 percent, global e-waste could reach 76-88 million metric tons by 2030, wasting billions of dollars in valuable resources due to low recycling rates.

Herat (2021) highlighted that the Philippines generates 425,000 tons of e-waste annually, positioning it in the middle tier globally for e-waste generation. Regarding per capita e-waste, the Philippines surpasses neighboring Southeast Asian countries such as Bangladesh (1.2 kg) and Cambodia (1.1 kg). This increase is primarily driven by the increasing use of electronic devices and the limited recycling infrastructure in the country. Scholarly discussions highlight the dual nature of e-waste: a growing health and environmental crisis (Zhang et al., 2012; Hossain et al., 2015; Forti et al., 2020). Toxic chemicals from e-waste contaminate air, soil, and waterways, harming ecosystems and food supplies (Orisakwe et al., 2019). This impact is evident in communities near Ghana's Korle Lagoon and Pakistan's Lyari River, where pollution endangers aquatic life and livelihoods (Huang et al., 2014; Hameed et al., 2020). In General Santos City, a coastal urban area in Mindanao, e-waste mismanagement threatens Sarangani Bay, a critical fishing ground for thousands. Contamination disrupts its ecosystem, jeopardizing biodiversity, fisheries, and the economic well-being of nearby communities (Indab et al., 2003).

On the other hand, discarded electronics contain valuable materials like gold, silver, and rare earth elements that can be recovered through proper recycling processes (Cesaro et al., 2018). However, an alarming 86% — or 44.3 million metric tons — of global e-waste is either improperly discarded or left unaccounted for, resulting in the loss of valuable resources. This mismanagement directly undermines the economic potential of e-waste, which is estimated to contain raw materials worth approximately \$57 billion in 2019 (Forti et al., 2020). To address this issue, scholars propose adopting a Circular Economy approach, focusing on "urban mining" to maximize resource recovery (Hörtl et al., 2017; Azevedo et al., 2019; Debnath et al., 2022).

Amid escalating e-waste challenges, the Philippine government must adopt robust policies such as Extended Producer Responsibility (EPR), waste collection, recycling initiatives, and public sensitization (Kumar et al., 2017). While Republic Act 9003, the "Ecological Solid Waste Management Act of 2000," provides a foundation for waste management, its application to e-waste is technically inadequate and semantically vague (Carisma, 2009). The Act's primary focus on general solid waste and its vague categorization of "special waste" hinder precise e-waste measurement, especially in urban settings (Li et al., 2006). This issue is further exacerbated by the "invisible flow" of e-waste — exports from developed countries to the Philippines, a non-signatory to the Basel Ban, potentially turning the country into a dumping site (Lepawsky & McNabb, 2010; Bakhiyi et al., 2018). Insufficient monitoring of domestic e-waste intensifies the issue (Yang, 2020).

The weak public compliance with waste segregation and materials recovery in General Santos, especially regarding e-waste, highlights significant challenges in the city's waste management efforts. The absence of penalties or incentives for proper disposal leads to apathy towards practices like e-waste segregation, resulting in improper disposal, contamination of recyclables, and accumulation in landfills (Garcia, Marcilla, Flores & Lapong, 2024). E-waste, which contains hazardous materials, requires specialized handling, but without effective enforcement and infrastructure, people may resort to hazardous and inefficient *ad-hoc* disposal methods. To address this, the 10-Year Ecological Solid Waste Management Program must incorporate stronger regulations, public education, and penalties to ensure proper segregation and disposal (BIMP-EAGA, 2018) of both general and electronic waste.

While global advancements in recycling technologies offer promising solutions, localized frameworks tailored to regional conditions remain limited. Effective e-waste recycling requires addressing unique local challenges and optimizing opportunities. Literature highlights the potential of Principal Component Analysis and Semi-Partial Correlation Coefficients to reveal interdependencies among e-waste categories, identifying patterns that inform targeted recycling strategies. Understanding these relationships strengthens General Santos City's circular economy by identifying opportunities for material recovery, reuse, and waste reduction tailored to its specific waste profile and economic capacity. This approach ensures more efficient and sustainable recycling outcomes. This study aims to develop a localized framework for e-waste recycling to address gaps in infrastructure and policies in General Santos City.

2.0 Methodology

2.1 Research Design

This study adopts a correlational descriptive research design, integrating multivariate analysis, to investigate the relationship between e-waste disposal practices across six categories of electronic and electrical equipment (EEE) and their impact on the waste diversion goals of General Santos City. Principal Component Analysis (PCA) was employed to distill complex data and highlight key factors influencing disposal behaviors, while semi-partial correlation analysis (SPCC) isolated the individual contributions of variables. PCA reduced data dimensionality by grouping correlated variables, while SPCC clarified direct relationships between e-waste categories and disposal behaviors, isolating confounding effects. This comprehensive analytical approach, grounded in the 3R hierarchy framework for e-waste disposal practice outlined by Blake (2018), provides refined insights into the key drivers of e-waste management. It offers actionable, context-specific recommendations to enhance local recycling programs and promote sustainable waste diversion efforts.

2.2 Research Locale

General Santos City (Gensan), known as the "Tuna Capital of the Philippines," faces substantial challenges in municipal solid waste management. The City Waste Management Office (CWMO) oversees the collection, segregation, and processing of various waste types, including food scraps, plastics, and paper, disposed of in the city's landfill. Gensan generates around 300 tons of waste daily, with a per capita generation rate of 0.289 kilograms. However, the city's collection efficiency is limited to 45%, with only 80–90 tons transported to the 64-hectare landfill in Barangay Sinawal. The solid waste sector contributes significantly to the city's environmental impact, accounting for 76% of its total greenhouse gas emissions, estimated at 54,662.16 tCO₂e. Despite a 53% waste diversion rate, approximately 60,162.8 metric tons of waste still end up in landfills annually (BIMP-EAGA, 2018). Building on the work of Garcia et al. (2024), this study focuses on the same five barangays – Dadiangas North, Dadiangas East, Dadiangas West, Dadiangas South, and Lagao (NEWS-L)—to explore how e-waste disposal practices intersect with the city's existing waste management infrastructure. This continuity strengthens the research's relevance and adds longitudinal significance, providing deeper insights into the evolving dynamics of waste management in Gensan.

2.3 Research Participants

This study utilizes the same sample of 102 participants from General Santos City as Garcia et al. (2024) to ensure consistency with the original research. It extends the previous work by examining the relationship between e-waste disposal practices across different EEE categories and the effectiveness of local e-waste management systems. Given the continuing e-waste challenges in the community, the sample remains relevant. While the original study focused on awareness-behavior gaps, this research explores the impact of disposal practices on local infrastructure. It investigates how to transform current challenges into opportunities for improvement – areas not fully addressed in the prior study. The sampling plan follows a multi-stage hybrid methodology combining stratified and proportionate probability sampling to ensure consistency. Participants are drawn from three strata: Household-Level Consumers (HHCs), Commercial-Level Consumers (CLCs), and Consumers from Educational Institutions (CEIs), with a proportionate allocation based on each group's contribution to e-waste generation.

2.4 Research Instrument

This novel study builds upon the instrument employed in our previous research (Garcia et al., 2024), which explored the cognitive and affective factors influencing e-waste disposal practices. In the previous study, we asked participants to account for their e-waste disposal practices across six electrical and electronic equipment (EEE) categories. These practices, aligned with the 3R hierarchy of e-waste management, included discarding and ordinary waste, hoarding, reclaiming functional parts, repairing, recycling, selling, and donating (Blake, 2018), providing a comprehensive understanding of disposal behaviors within each EEE category.

2.5 Data Gathering Procedure

The present study used the existing data from Garcia et al. (2024) to analyze how disposal practices align with the 3R hierarchy of e-waste management outlined by Blake (2018). Based on the literature, we developed a seven-level disposal practices spectrum that categorizes disposal behaviors in increasing order of sustainability, ranging from the least sustainable (level 1) to the most sustainable (level 7), creating a comprehensive continuum.

Donation is a top reuse strategy within the spectrum, giving electronics a second life. Selling follows, allowing devices or parts to be exchanged for money and promoting resource conservation. Recycling recovers valuable materials like metals and rare earth elements, reducing the need for virgin resources and minimizing environmental harm (Zeng et al., 2018). Recovery extracts materials from e-waste that cannot be recycled, playing a key role in resource preservation. Repair extends the life of devices by restoring functionality. Hoarding and storing old electronics instead of disposing of them delays recycling or reuse. Finally, disposal is a last resort, with e-waste often mixed with regular waste, posing significant environmental risks.

We imported the detailed dataset from the previous study into Jamovi, an open-source software known for its robust capabilities in performing both univariate and multivariate analyses (Şahin & Aybek, 2019). To uncover patterns and reduce the complexity of the data, we applied Principal Component Analysis (PCA). Bartlett's Test confirmed the presence of significant relationships ($\chi^2 = 108$, $df = 15$, $p < .001$), supporting the use of multivariate analysis. Hence, to further refine the PCA results, we utilized Semi-Partial Correlation Coefficients (SPCC) to clarify the direct relationships between the variables and the identified principal components (Abdi, 2007).

2.6 Ethical Considerations

The study adhered to ethics approval no. 189-2024-MSUGSC-IERC from the Mindanao State University (MSU) Institutional Ethics Review Committee (IERC). The committee classified the research instrument as non-sensitive and ensured participant anonymity in compliance with the Data Privacy Act 2012.

3.0 Results and Discussion

3.1 Analysis and Implications of EEE Diffusion Rates

The Prevalence of Electronic and Electrical Devices: Exploring E-Waste Scenarios

The EU 2012/19 Directive defines e-waste as electrically or electronically powered equipment no longer in use, categorized into six groups (Baldé et al., 2015), each presenting unique challenges in disposal and recycling. Table 1 illustrates the percentage of each consumer segment (stratum) using various types of EEE, including Temporary Exchange Equipment (TEE), Screens and monitors (S&M), Lamps, Large EEE (LEE), Small EEE (SEE), and Small ICT Equipment (SICT). The data highlights high penetration rates across all segments, showing widespread usage. TEE and SICT items, such as air conditioners, refrigerators, smartphones, and laptops, have near-universal adoption with a 98% penetration rate. Lamps exhibit 100% penetration, emphasizing their ubiquity in residential, commercial, and educational settings. SEE appliances, like electric fans and irons, show 93% penetration. S&M items (e.g., TVs) have a lower commercial penetration (79%) but higher usage in households and educational institutions. LEE items, such as washing machines and photocopiers, exhibit higher penetration in households (77%) than in the commercial sector (68%), with educational institutions leading at 86%.

Table 1. EEE penetration rates by segment

Stratum	TEE	S&M	Lamps	LEE	SEE	SICT
Commercial	98%	79%	100%	68%	90%	100%
Schools	100%	100%	100%	86%	100%	100%
Households	97%	85%	100%	77%	90%	95%

The Rising Tide of E-Waste: Challenges and Opportunities in Sustainable Management

As the Philippine economy grows, the adoption of electric appliances follows a predictable pattern, with households initially prioritizing essential items for lighting (Lamps) and television sets (S&M). As incomes rise, families invest in essential but costly appliances like refrigerators (TEE), crucial for food preservation, while washing machines (LEE) are adopted later, often seen as luxury items in rural areas where manual laundry persists (McNeil & Letschert, 2010). The increasing use of small household appliances and ICT gadgets, including mobile phones, laptops, and air conditioning units (TEE), further exacerbates e-waste issues in the country. The widespread reliance on electronics for communication and internet access (Albert et al., 2021) and the growing popularity of energy-intensive items like air conditioning due to rising incomes and temperatures intensify the challenge. However, the Philippines faces inadequate e-waste management infrastructure and regulations, heightening environmental and health risks (Oteng-Ababio, 2012; Baldé et al., 2017). As the volume of e-waste rises, adopting sustainable disposal practices and effective recycling strategies is crucial. The following discussion examines EEE categories, disposal methods, and opportunities for improving sustainable e-waste management practices.

Disposal Practices for Temperature Exchange Equipment (TEE)

This category includes refrigerators, air conditioners, heat pumps, freezers, and dehumidifiers. These items are significant because they often contain hazardous refrigerants like Chlorofluorocarbons (CFCs) and Hydrochlorofluorocarbons (HCFCs), which can cause significant environmental harm if improperly disposed of (Benhadid-Dib & Benzaoui, 2012). The average lifespan of everyday TEE is around 10-15 years for refrigerators and air conditioners (Ikhlayel, 2016). The data shows that repair is the most common TEE disposal method among commercial, educational, and household consumers, with mean scores of 4.03 to 4.61, reflecting moderate pro-environmental practices. However, improvement is needed to achieve higher sustainability levels, like recycling or donating. Low standard deviations (1.33–1.48) indicate moderate variation within sectors.

Disposal and Management of Waste Screens and Monitors (S&M)

This category includes Cathode Ray Tube (CRT) monitors, flat-screen TVs, LCD monitors, and LED monitors. CRTs, used in older televisions and monitors, contain lead and cadmium, which are toxic. These items require special handling to avoid releasing these harmful substances (Cenci, Dal Berto, Schneider, & Veit, 2020). LCD and LED screens also pose risks due to mercury content, necessitating proper recycling processes. These items typically have an average lifecycle of 2–5 years (Kahhat & Williams, 2012). Educational institutions (mean = 4.50) excel in eco-friendly disposal, surpassing households (4.03). This aligns with the findings of Solé et al. (2012), which highlight the role of educational institutions as key societal influencers in fostering a foundational understanding and awareness of e-waste issues. Meanwhile, households exhibit the highest inconsistency (SD = 2.15), indicating diverse disposal practices.

Disposal Trends for Lamps

Lamps, including fluorescent and LED lights, pose recycling challenges due to their small size, complex materials, and toxic elements (EPA, n.d.). Though less hazardous, Halogen lamps require separate handling to recover valuable metals like tungsten or molybdenum. Lamp lifecycles vary: incandescent lamps last 1,000–2,000 hours, halogen lamps 2,000–4,000 hours, fluorescent lamps 8,000–10,000 hours, and LEDs 25,000–50,000 hours. Data from General Santos City shows diverse disposal practices. Households, with a mean score of 1.28, often discard lamps with regular waste, while educational institutions score 3.77, reflecting more responsible practices ranging from reclaiming to repairing. Commercial establishments score 2.88, indicating mixed disposal practices, with a particular tendency toward hoarding and reclaiming reusable parts. Despite the ubiquity of lighting goods, disposal habits exhibit significant variability, as reflected in standard deviations ranging from 0.999 to 2.20.

Challenges in Disposing of Large Appliances

This category includes large household appliances such as washing machines, stoves, dishwashers, microwaves, dryers, and ovens. While their size complicates recycling, proper separation makes material processing more efficient. The lifespan of these appliances varies depending on usage, quality, and environmental factors. Washing machines typically last 10-15 years, while stoves and ovens have a longer lifespan of 10-20 years. Descriptive statistics show that educational institutions lead in managing large appliances (mean = 4.59), particularly in repair and recycling, with relatively low variability (SD = 1.26). This suggests that educational institutions have more consistent practices in these areas. In comparison, residential consumers follow closely (mean = 4.48), focusing primarily on repair, but exhibit higher variability (SD = 1.82), indicating less consistency in their disposal practices. Commercial establishments trail behind (mean = 3.62), emphasizing reclamation and repair over recycling, and also show significant variability (SD = 1.66), reflecting inconsistencies in their e-waste management efforts.

Recycling Challenges of Small Household EEEs

Small electrical equipment, such as toasters, irons, blenders, and vacuum cleaners, are widely used in homes, offices, and institutions. While consuming less power than larger appliances, these items require careful recycling due to the materials they contain (Perkins et al., 2014). Their lifecycles vary from 5 to 15 years: toasters and irons last 5–7 years, while microwaves and vacuum cleaners average 8–12 years (Kahhat et al., 2008). Disposal data shows strong repair practices across sectors, with scores of 4.26 to 4.39. Educational institutions exhibit the most consistent behavior (SD = 1.45), reflecting structured approaches, while the residential sector has more significant variability (SD = 2.00). This inconsistency may result from differences in awareness, facility access, or habits,

emphasizing the need for targeted strategies to promote responsible disposal practices, particularly among households.

Vast Complexities in Small ICT Equipment (SICT)

SICT equipment like mobile phones, laptops, and tablets poses recycling challenges due to compact sizes, intricate designs, and valuable metals such as gold and copper (Vishwakarma et al., 2022). With a 1 to 5 years lifespan, these devices are often replaced due to rapid technological advancements and planned obsolescence (Kahhat et al., 2008; Gecit, 2020). Disposal practices vary across sectors in General Santos City: educational institutions lead in repair and recycling efforts (mean = 4.91, SD = 1.41). The commercial sector follows with moderate consistency (mean = 4.68, SD = 1.62), while households exhibit more significant inconsistency (SD = 1.83), often leaning toward repairing broken devices (mean = 4.41). Amid rapid urbanization, the volume of e-waste is steadily increasing, necessitating an upgrade to the local government's Centralized Materials Recovery Facility (CMRF) to manage the complexity of electronic waste effectively. E-waste segregation in the city must focus on key considerations that ensure proper disposal and facilitate the recovery of valuable resources and the safe handling of harmful substances.

Size and Bulk

The size and bulk of e-waste are significant considerations when developing a waste management system (Kahhat & Williams, 2009). Large and bulky items, like refrigerators, air conditioners, and washing machines, require specialized facilities to handle their bulk and ensure that materials such as steel, aluminum, and copper are recovered efficiently. These items should be segregated early in the collection process to prevent contamination with smaller devices and ensure the safe extraction of valuable materials. Non-hazardous components, such as plastics and metals from smaller appliances like toasters and radios, must be separated from hazardous items like batteries, CRT monitors, and fluorescent lamps containing mercury, lead, and cadmium. General Santos' CMRF must include dedicated areas for hazardous materials to prevent harmful exposure or environmental contamination.

Non-hazardous vs. Hazardous Components

As Perkins et al. (2014) noted, a key element of e-waste segregation is identifying hazardous components that pose significant risks to human health and the environment. Items containing harmful materials, such as mercury, lead, and cadmium—typically found in batteries, CRT monitors, and fluorescent lamps—must be carefully separated from non-hazardous components like plastics, metals, and circuit boards. The non-hazardous materials can generally be recycled, reducing the overall environmental impact of e-waste.

Recyclability and Material Recovery

The recyclability of different components plays a crucial role in the e-waste segregation process. Items like printed circuit boards (PCBs) in computers and mobile phones contain valuable metals such as gold, silver, and copper. These components should be carefully segregated for specialized recovery processes (Baldé et al., 2015). Additionally, wires and cables from devices like televisions, laptops, and washing machines should be separated to recover metals, particularly copper, which is highly valuable in recycling. Focusing on material recovery not only prevents waste but also helps reduce the demand for raw materials, which has economic and environmental advantages.

Functionality

Not all e-waste needs to be recycled—some items can still be used. Functional or reusable electronic devices, such as old mobile phones, laptops, or printers, can often be refurbished and reused, extending their life cycle and reducing the pressure on recycling systems (Baldé et al., 2015; Gecit, 2020). Segregating functional items from non-functional or obsolete ones is essential in promoting reuse. These items can be donated, sold, or refurbished, offering a second life to equipment with value. This practice reduces the need for immediate recycling and supports sustainable consumption by encouraging the repair and reuse of electronic devices. It further aligns with circular economy principles, where products are used for as long as possible before being recycled or disposed of.

Energy Storage

Batteries, capacitors, and power banks are standard in some Small EEE and many items under the Small ICT (SICT) category. However, these items contain potentially hazardous chemicals such as lithium, cobalt, and nickel, which require distinct handling and specialized recycling processes. Batteries, for instance, can leak harmful substances if improperly disposed of or handled, leading to environmental contamination. Authors such as Perkins et al. (2014) and Gecit (2020) suggest that energy storage devices should be segregated from other e-waste categories and processed separately to mitigate this risk. Specialized collection systems are needed to handle these items safely, ensuring that dangerous substances are contained and the valuable metals within these devices are recovered.

3.2 Analyzing the Spread of Disposal Practices Across EEE Categories

Urban E-Waste Disposal Trends: Bridging Behaviors and Infrastructure Gaps

Figure 1 provides practical insights into e-waste management practices in General Santos City, highlighting key challenges and opportunities for improvement. Based on the density distribution and the associated skewness and kurtosis values, TEE and LEE categories show similarities in their disposal patterns. Both categories have relatively low skewness (-0.0579 for TEE and -0.0888 for LEE), suggesting that their disposal behaviors are more evenly distributed across various disposal methods, such as recycling, selling, and repairing. These practices are aligned with the 3R hierarchy of conserving resources, reducing waste, and minimizing the environmental impact of manufacturing new products (Blake, 2018).

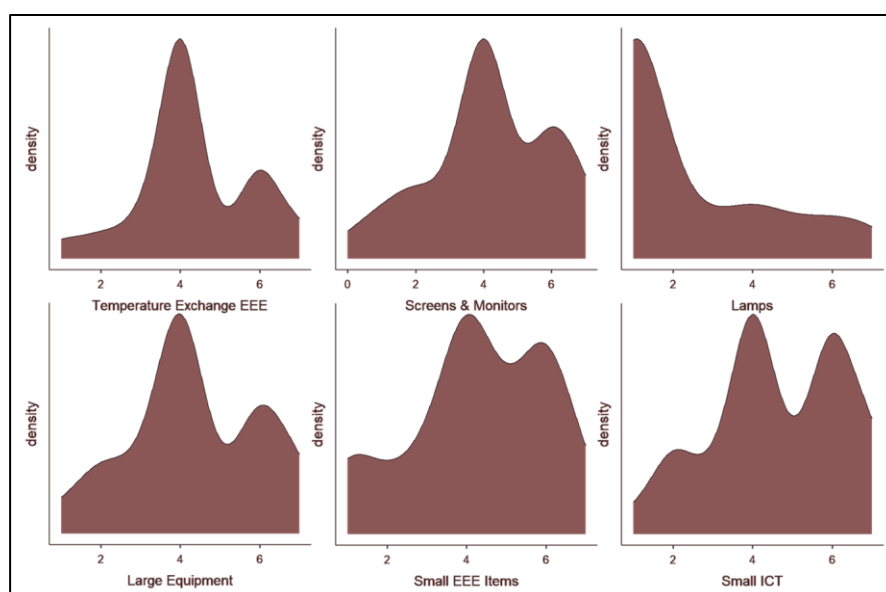


Figure 1. Density distribution of disposal practices across six EEE categories

Sectoral Variations and Sustainability Challenges

Efforts to extend the lifespan of appliances like refrigerators, air conditioners, and washing machines align with sustainable consumption principles (Mashhadi et al., 2016). These practices reflect local cultural values of thrift and "Pinoy (Filipino) Ingenuity," seen in widespread do-it-yourself (DIY) repairs and repurposing of electronics reported by the respondents. For lower-income residents, such approaches offer a cost-effective alternative to purchasing new items, blending financial practicality with environmental sustainability (Bovea et al., 2020). In contrast, the Screens & Monitors (S&M) and Small ICT (SICT) categories exhibit more significant negative skewness (-0.351 for S&M, -0.315 for SICT), indicating a higher tendency to hoard or reclaim valuable materials, prioritizing material recovery over more sustainable disposal methods.

Households (skewness of 0.193) and the commercial sector (skewness of -0.127) show more significant variability in e-waste disposal, with inconsistent behaviors across sectors. Negative kurtosis values, particularly in educational institutions (-0.422), point to significant hoarding, especially of items like monitors, mobile phones, and some appliances, often kept for sentimental value (Wakolbinger et al., 2014), potential future use (Esenduran

et al., 2019), or lack of recycling awareness (Wilkinson & Williams, 2020). Hoarding of e-waste delays recycling processes and exacerbates environmental waste, as valuable materials remain unused and hazardous components continue to pose environmental risks (Kahhat & Williams, 2012). Lamps, with the highest skewness (1.08), are improperly disposed of, likely due to inadequate infrastructure and awareness, necessitating a separate management approach.

Huisman et al. (2019, Part I) argue that the effectiveness of e-waste management is shaped by local infrastructure and consumer behavior. They emphasize that the availability of collection points, recycling facilities, and consumer awareness influences sector-specific disposal practices. Inadequate infrastructure and education lead to inconsistent disposal behaviors, hindering effective recycling. The authors advocate for tailored solutions addressing local contexts and sectoral needs. However, these findings overlook complexities in General Santos City, where sector-specific variations in disposal practices may reveal additional challenges. Hence, the current data does not fully capture these differences. To address this gap, Principal Component Analysis (PCA) can uncover relationships between variables and provide deeper insights into consumer behaviors. Bartlett's Test ($\chi^2 = 108$, $df = 15$, $p < .001$) supports the use of factor analysis, rejecting the null hypothesis that the variables are uncorrelated (Bartlett, 1950).

3.2 Multivariate Analysis of E-Waste Disposal Trends

Identifying Key Patterns for Optimized Management: A Principal Component Analysis

We conducted a Principal Component Analysis (PCA) using six e-waste categories, chosen for their relevance to e-waste flows and their impact on recycling, collection, and disposal. PCA helped identify patterns and reduce data dimensionality, grouping categories with similar characteristics for more efficient processing. Integrating the findings from the factor analysis and the density distribution analysis, we can understand e-waste disposal behaviors comprehensively and their implications for future waste management strategies. Table 2 below presents the eigenvalues and variance percentages for Factors 1 through 6, indicating the key categories that exhibit strong correlations and require targeted recycling strategies.

Table 2. *Summary of factor analysis for disposal trends*

Component	Eigenvalue	% of Variance	Cumulative %
1	3.014	50.24	50.2
2	1.091	18.18	68.4
3	0.618	10.30	78.7
4	0.547	9.11	87.8
5	0.464	7.74	95.6
6	0.266	4.43	100.0

Factor 1: TEE, S&M, and SICT (High-Priority Categories)

This factor includes large appliances like air conditioners, refrigerators (TEE), and screens and monitors (S&M), which contain hazardous materials like mercury and lead and require specialized recycling. The high penetration rate of temperature exchange equipment, screens and monitors, and small ICT devices in households, businesses, and educational institutions in General Santos reflects a significant accumulation of e-waste across these sectors. While consumers may engage in responsible disposal practices, such as recycling or repair, these products' complexity and environmental risks highlight the need for robust local infrastructure to manage their recycling and mitigate potential impact effectively.

Factor 2: LEE and Lamps (Large Appliances and Hazardous Components)

This category includes larger appliances like washing machines, microwave ovens, and lamps containing hazardous substances. While LEE items have a lower penetration rate than lamps, they present disposal challenges due to size and hazardous chemicals like mercury. The density distribution analysis shows that improper disposal practices for LEE and lamps are standard. Specialized infrastructure and policies are needed to dispose of these items, with dedicated recycling zones to recover valuable materials like copper and aluminum while safely handling hazardous components like capacitors.

Factor 3: SEE (Small Appliances and Audio Equipment)

Small appliances like toasters, radios, and speakers fall under this category. The widespread prevalence of Small Electrical Equipment (SEE) is often accompanied by improper disposal or hoarding once these items are no longer

functional. Due to their compact size, consumers may not prioritize proper disposal practices (Garcia et al., 2024). These items contain valuable materials that should be recycled, and awareness campaigns promoting the recyclability of small appliances and refurbishment and resale opportunities should be prioritized.

Factors 4 and 5: Niche and Emerging E-Waste Categories

This category includes niche items like medical equipment, smartphones, drones, and electric vehicle (EV) batteries, which contain rare or hazardous materials like mercury and lithium. Disposal practices for these high-penetration items are often irregular, with behaviors like hoarding and salvaging valuable components. The city's CMRF must adapt to manage these emerging categories through specialized facilities and methods.

Factor 6: Outliers (Lamps)

Although lamps contribute minimally to the overall variance, they warrant attention due to persistent improper disposal practices. Given their widespread possession across various consumer segments, this issue remains prevalent, underscoring the need for targeted disposal solutions. The lack of behavioral onus and insufficient recycling infrastructure contribute to these improper disposal practices.

However, it is essential to address the PCA's failure in refining the classification of lamps by grouping them with LEE in Factor 2. This grouping neglects the unique challenges lamps pose, such as hazardous materials (e.g., mercury) and the complexities of recycling. While PCA identifies broad patterns (Jolliffe, 2002), semi-partial correlation coefficients (SPCC) offer a more nuanced analysis by isolating the independent effects of factors such as size, bulk, hazardous components, and recyclability (Cohen et al., 2013). SPCC controls for other variables, providing more precise insights into disposal behaviors. We opted for semi-partial over partial correlation to avoid distorting relationships and enhance data accuracy, thereby improving explanatory power (Kim, 2015).

3.3 Findings from Semi-Partial Correlation Analysis

Exploring Waste Clusters: Statistical Relationships and Insights

The semi-partial correlation coefficients (SPCC) reveal that e-waste categories can be grouped into three distinct clusters (Table 3) based on size, disposal behaviors, infrastructures, policies, and their economic and environmental impacts. This classification aids in developing targeted e-waste management strategies. As Huisman et al. (2019, Part II) suggest, differentiation optimizes collection systems. Precision in processing technologies is also vital for efficiently separating hazardous components from recyclable materials, improving recovery rates, and minimizing environmental impacts.

Table 3. Overview of e-waste clusters

Category	Common (Non-Hazardous)	Common (Hazardous)	Valuable Stocks	Collection System	Recycling System
Cluster 1	Metals, Plastics, Glass, Aluminum, Steel and Iron, Silicon, Rubber, Polyurethane	CFCs, HFCs, Cr6+, HCFCs, Hg, Pb, Cd, PCBs, BFRs, , Asbestos, Hg, Pb, Cd, , PCBs, BFRs, Cr6+	Au, Ag, Pd, Pt, Cu, Nd, Dy, La, Ce	designated collection points, take-back programs	disassembly, refrigerant recovery, glass and metal recycling
TEE S&M		Hg, Pb, Cd, PCBs, BFRs, Cr6+, Asbestos, As	Au, Ag, Cu, Pd	designated collection points, retail drop-off	disassembly, mercury neutralization, glass and metal recycling
Cluster 2		Hg, Pb, Cd, PCBs, BFRs, Cr6+, Asbestos, As	Au, Ag, Cu, Pd, Rh, Pt, Nd, Dy	take-back programs, dedicated collection points	disassembly, precious metal recovery
SEE			Au, Ag, Pd, Cu, Nd, Dy, Pr, La	designated collection points, take-back programs	disassembly, refrigerant recovery, glass and metal recycling
LEE			Au, Ag, Pd, Cu, Pt, Rh	take-back programs, recycling centers	disassembly, metal and plastic recycling
SICT					
Lamps		Hg, Pb, Cd, PCBs, BFRs	Au, Ag, Pd, Pt	designated collection points, retail drop-off	disassembly, glass and metal recycling

Cluster 1: TEE and S&M

A strong positive correlation (Pearson's $r = 0.509$, $p < 0.001$) exists between TEE (air conditioners, refrigerators, freezers) and S&M (televisions, computer monitors, and other screen-based devices), indicating that consumers often dispose of or recycle these items together. This is mainly due to their similar materials, such as glass, plastic,

copper, and aluminum, which are valuable and highly recyclable. Copper, in particular, has high scrap value, contributing to an efficient recycling process when collected together. However, both categories contain hazardous materials, like refrigerants in TEE and mercury in older CRT televisions, posing environmental and health risks if improperly disposed of (Priya & Hait, 2018). Furthermore, TEE and S&M devices contain precious materials, such as gold and silver, which can be recovered during recycling. In factor analysis, ICT devices were grouped with temperature exchange equipment (TEE) and screens and monitors (S&M) based on shared characteristics. However, correlation analysis reveals a clear distinction, as ICT devices exhibit unique disposal behaviors and recycling complexities. These devices often contain different materials and are more likely to be refurbished or reused, which sets them apart from TEE and S&M in terms of end-of-life management.

Cluster 2: SEE, LEE, and SICT

Within Cluster 2, comprising SEE, LEE, and SICT, moderate to strong positive correlations are observed between these categories. Specifically, the correlation between SEE and LEE is $r = 0.419$ ($p < 0.001$), suggesting that small and large electronic appliances often share similar disposal behaviors. Similarly, the correlation between SEE and SICT is $r = 0.395$ ($p < 0.001$), highlighting a moderate connection in disposal behaviors between small household appliances and small ICT devices. These correlations imply that consumers' disposal habits for these items may be influenced by similar factors, such as material types, available disposal systems, or the convenience of recycling (Kochan et al., 2016; Echegaray & Hannstein, 2017). Consistent with the factor analysis, these devices share common recoverable materials such as glass, plastic, metal, and copper, which can be recycled through disassembly and precious metal recovery processes (Nnorom & Osibanjo, 2008). For example, lithium-ion batteries in small ICT devices are hazardous and require specialized recycling systems to avoid environmental damage. The high reusability of metals like copper, gold, and silver in these devices underscores the importance of improving recycling infrastructure.

Broken Lamps and the Toxic Toll of a Throwaway Society

Disposing of lamps, particularly compact fluorescent lamps (CFLs), presents significant challenges due to hazardous materials like mercury, which require specialized disposal methods (EPA, 2020). The SPCC analysis refined the factor analysis results by highlighting the unique disposal complexities of lighting equipment, distinguishing them from other e-waste categories, and emphasizing the need for separate handling and recycling protocols. The weak correlation between Lamps and other e-waste categories $r = 0.067$ ($p > 0.05$) reflects their unique disposal needs, which consumers often overlook. Without clear disposal guidelines, improper disposal can lead to environmental risks, including mercury contamination. Fluorescent lamps, for instance, contain 3-5 milligrams of mercury per unit and are composed of 90% glass, a material suitable for reuse. Despite achieving 85-90% recycling rates in Europe, global rates remain low due to inadequate infrastructure (Leopoldino et al., 2019).

In the Philippines, the transition from incandescent bulbs to energy-efficient CFLs began in 2010 to reduce energy consumption (GMA News, 2009). However, this initiative overlooked the environmental challenges posed by CFLs' mercury content (USGS, n.d.). With limited recycling infrastructure, improper disposal led to an estimated 25.5 tons of mercury circulating by 2018 (MicroRenewables, 2023), undermining RA 9003's objectives to protect public health and the environment. Modern lamps, including LEDs and CFLs, prioritize convenience over sustainability, discouraging repair and reuse. This, as unclear disposal guidelines and limited repair options, contribute to improper disposal practices. Proposed solutions, such as repurposing lamp glass into geopolymer materials (Novais et al., 2016), face challenges due to the increasing volume of LEDs (Kumar et al., 2019; Cenci et al., 2020). Improper disposal, particularly in ecosystems like Sarangani Bay, exacerbates environmental risks, as mercury bioaccumulates, posing neurotoxic threats and economic inefficiency by leaving valuable resources unrecycled (Clean Energy Wire, 2021).

Development of a Data-Driven Framework for E-Waste Management

In 2016, General Santos City disposed of an average of 80.12 tons of waste daily, with plastics (51.25%) and paper (28.53%) accounting for the most significant portions (Pareja, n.d.). While e-waste is not explicitly categorized, it is likely included under the "special waste" classification due to its hazardous components, complicating disposal efforts. Researchers, including Ádám et al. (2021) and Ikhlal (2018), highlight the need to improve municipal solid waste management (MSWM) systems, which often overlap with e-waste recycling processes, as a viable

solution. This is particularly relevant given the frequent mixing of e-waste with general waste in General Santos City (Garcia et al., 2024).

In line with this, the SPCC analysis, summarized in Table 3, provided valuable insights into the relationship between e-waste categories and disposal behaviors, complementing the findings from PCA. Based on these insights, we propose an e-waste management framework that integrates robust institutional mechanisms, positions e-waste as a valuable commodity to formalize urban mining practices and establishes a comprehensive collection system design. The framework also includes the development of advanced processing and recycling infrastructure alongside implementing a structured data management system for effective tracking and reporting.

Institutional Mechanism

The success of sustainable e-waste management in General Santos City hinges on strong policy development, stakeholder engagement, and effective governance. A key strategy is implementing a localized EPR mechanism, which holds manufacturers accountable for their products' entire lifecycle—from design to disposal. EPR encourages the creation of recyclable, reusable, and refurbishable products, reducing e-waste and promoting responsible consumer behavior through clear labeling and disposal instructions (Maitre-Ekern, 2021). Take-back programs, a vital component of EPR, ensure manufacturers are responsible for collecting and recycling products at the end of their lifecycle. These programs incentivize manufacturers to design with recycling in mind. The local government can mandate these take-back systems, ensuring proper collection and processing of discarded electronics. Such systems can be facilitated through partnerships between local government units, manufacturers, and recyclers, with frameworks supported by Republic Acts 9003 and 6969, ensuring comprehensive management of hazardous and e-waste materials.

To address policy gaps, General Santos City can leverage the "governance from below" principle in the Local Government Code of 1991 (Garcia et al., 2024). The city could require manufacturers to establish accessible collection points, including mobile units for remote areas, and provide incentives such as tax breaks for businesses investing in advanced recycling technologies. A robust data collection and monitoring system, driven by an EPR mechanism, is essential for tracking e-waste from collection to recycling. Manufacturers must report sales volumes, collected e-waste, and recycling rates (Khetriwal et al., 2009). Regular audits would ensure compliance with recycling quotas and promote transparency (Osibanjo & Nnorom, 2007). Global initiatives, such as the Waste Electrical and Electronic Equipment (WEEE) Directives, set environmentally sound collection and recycling standards. Circular economy policies promote the recovery of valuable metals and rare earth elements, while collaborative partnerships among governments, private companies, and NGOs drive innovation.

To ensure financial sustainability, service fees can support recycling initiatives. Public-private partnerships (PPP) can enhance infrastructure, expand recycling, and formalize the informal sector, ensuring safer working conditions and greater inclusivity in e-waste management. The Basel Convention advocates for environmentally sound management (ESM) and material recovery through financial mechanisms like collection and pre-processing fees (Basel Convention, n.d.). General Santos City can adopt these practices, using service fees and revenue-sharing models for operational viability. Collection and pre-processing fees generate income, aligning with the convention's financial strategies. Profit-sharing agreements with regional refining facilities could create revenue through urban mining, recovering valuable metals and REEs (Sharma et al., 2021; Xavier et al., 2021; Murthy & Ramakrishna, 2022). Refurbishing components and customizing pre-processing will capture more value before recycling.

Commodification of E-Waste

The recovery of precious metals and rare earth elements (REEs) from e-waste presents a significant economic opportunity, mainly through urban mining. Metals like gold, valued at around \$60 per gram in 2024, and silver, priced at approximately \$0.80 per gram, are highly sought for their conductivity and resistance to corrosion (Kitco, 2024; SilverPrice.org, 2024). Copper, another essential metal used in wiring and circuit boards, is valued at about \$9,000 per metric ton (LME, 2024). These high values underscore the economic potential of extracting valuable metals from e-waste, especially from devices within the various EEE categories highlighted in the literature.

In particular, small ICT devices (e.g., phones, laptops, tablets), screens and monitors (e.g., TVs, computer monitors), temperature exchange units (e.g., refrigerators, air conditioners), and large EEE (e.g., washing machines, large household electronics) are rich sources of valuable metals. Copper is commonly found in these devices' wiring and circuit boards, while precious metals like gold and silver are used in components like connectors, circuit boards, and other critical parts. REEs, such as neodymium, dysprosium, and praseodymium, are essential for producing high-performance magnets in wind turbines, electric vehicles, and smartphones. These REEs are embedded in various e-waste categories, from small ICT devices (for components like hard drives and motors) to screens and monitors (for use in displays and magnets) and even in temperature exchange systems (for use in compressors and cooling systems).

Other valuable elements like europium and yttrium, used in display technologies, and lanthanum and cerium, vital for battery production and catalytic converters, can be found in a broad range of electronic products, including washing machines and refrigerators, as well as in small ICT devices and temperature exchange units. The growing global demand for these REEs, driven by their importance in renewable energy systems and advanced electronics, further emphasizes the need for efficient recovery methods (Shevchenko et al., 2019). Elements such as dysprosium, terbium, neodymium, praseodymium, and europium can fetch between \$500 and \$1,000 per kilogram, depending on market conditions and purity (Mining.com, n.d.), underlining the immense value trapped in these discarded electronic devices.

Implementing advanced e-waste recovery technologies across all categories optimizes the extraction of valuable materials, enhancing resource recovery, reducing landfill waste, and minimizing environmental impact through efficient recycling processes. Combining technological advancements with skills development ensures the safe recovery of these materials while minimizing environmental harm. A comprehensive, integrated approach recovers critical metals and REEs from these diverse categories of e-waste, supporting sustainable practices and generating both environmental and economic benefits (Kara et al., 2022). To address the technological disparity, this study proposes a "Best-of-2-Worlds" approach (Wang et al., 2012). General Santos would manage the initial sorting and separating of e-waste locally while outsourcing complex hazardous waste processing to regional facilities meeting national safety standards (Ikhlayel, 2018). We emphasize ensuring worker safety during sorting and dismantling, underscoring the need for safety protocols, PPE, and training to protect workers.

Collection System Design

The city currently relies on a dual approach, with private waste collectors handling 20% of waste and the informal sector managing 80%, bridging gaps in public infrastructure and ensuring services meet the demands of a growing population (Garcia et al., 2024). The system is under strain, with only three compactors, two dump trucks for the entire city, and three of 26 barangay Material Recovery Facilities (MRFs) non-operational. To improve efficiency, the literature supports our findings, suggesting that grouping the categories into three main clusters enhances organization and management.

Cluster 1, which includes TEE and S&M, relies on designated collection points, take-back programs, and retail drop-off locations for proper disposal. These systems are designed to manage bulky products like air conditioners, refrigerators, televisions, and computer monitors, which are difficult to dispose of due to their size and materials. Retailers and authorized service providers often offer take-back services when consumers replace old items, ensuring proper recycling instead of landfilling. Large appliances can also be dropped off at retail centers, recycling hubs, or unique collection points. Electronics manufacturers and retailers play a crucial role by providing incentives such as discounts or free pickup services to encourage consumers to return old items. For example, a new television purchase might include a discount or pickup service for the old one, ensuring it is properly recycled. Public education campaigns also raise awareness about the dangers of improper disposal and the benefits of recycling valuable metals from old electronics.

In Cluster 2, comprising SEE, LEE, and SICT, the collection system can be enhanced by establishing designated collection points in high-traffic areas, such as shopping centers, electronics stores, and municipal facilities. These locations will provide easy access for consumers to drop off small and large appliances and ICT devices. Furthermore, mobile collection units can be deployed in residential areas to assist with the disposal of larger appliances like washing machines and dishwashers, offering added convenience. Complementing these efforts,

public awareness campaigns are crucial to educating the community on the environmental impacts of improper e-waste disposal and the availability of accessible collection systems.

For Cluster 3, which focuses on Lamps, the collection system should prioritize designated collection points and retail drop-off programs to facilitate proper disposal. Encouraging consumers to return used lamps to designated collection hubs, such as retail locations or dedicated recycling centers, ensures these items are safely handled. Moreover, promoting the adoption of LED technology, which is safer and has a longer lifespan compared to traditional mercury-containing lamps, will reduce the volume of hazardous waste. Focusing on non-hazardous alternatives in lamp design will also help mitigate long-term environmental and health risks associated with mercury.

Processing and Recycling Systems

The recovery and recycling component highlights the critical role of General Santos City's CMRF in advancing recycling and refurbishment efforts. Equipped with machinery to process plastics, metals, and glass, the facility supports the city's environmental goals of reducing waste and conserving resources by reprocessing materials into new products (Mmereki et al., 2016). In 2021, the city proposed securing nearly ₱2 billion in funding from the Land Bank of the Philippines (LBP) to enhance its solid waste management program. This loan would finance improvements such as acquiring heavy equipment, constructing a hospital waste facility, and developing a weighbridge (BIMP-EAGA, 2018). These investments will optimize waste management, recycling processes, and handling hazardous materials like medical and e-waste. The city is also expanding its infrastructure with a biohazardous waste treatment facility to meet regulatory standards and work toward DENR accreditation under Republic Act 9003 (Garcia et al., 2024). Also under consideration is adopting a Waste-to-Energy (WTE) model, which would convert waste into usable energy, aligning with the city's renewable energy goals (BIMP-EAGA, 2018). In conjunction with this, we recommend collaborating with businesses specializing in refurbishing used electronics, as this could generate economic opportunities while promoting environmental sustainability.

The reusability of items under the TEE and S&M categories (Cluster 1) is often limited due to hazardous materials. For example, refrigerants in air conditioners and refrigerators pose significant environmental risks if not adequately recovered. Similarly, mercury in light bulbs or screens complicates the reuse of specific components. Despite these challenges, the metals and plastics in these devices offer considerable reusability potential. Programs focusing on recovering these materials can significantly reduce environmental impact. The recycling system for these items typically involves disassembly, refrigerant recovery, and metal recycling. Disassembly separates materials, ensuring hazardous substances like mercury or refrigerants are safely removed and neutralized before the remaining parts are processed for recycling. Metals like copper and aluminum can be recovered through traditional methods, while specialized recovery systems are necessary for hazardous components like mercury and refrigerants.

Several alternatives and actions can be integrated. Introducing refrigerant recovery systems can ensure the safe extraction and neutralization of harmful substances prior to recycling. Additionally, incentivizing eco-friendly refrigerants, such as HFOs, which have a lower environmental impact, can significantly mitigate the harmful effects of refrigerants in air conditioners and refrigerators. Promoting the design and use of eco-friendly products that are easier to disassemble and contain fewer hazardous materials will streamline the recycling process and make it safer (Widmer et al., 2005). Additionally, mercury-neutralization technology for screens and monitors is a critical development that can reduce the environmental risks associated with electronic waste. Local recycling hubs can be established to streamline the collection and processing of these items. These hubs can focus on both non-hazardous materials (glass, plastic, metal) and hazardous materials (refrigerants, mercury), ensuring that waste is processed in an environmentally friendly manner.

For Cluster 2 (SEE, LEE, and SICT), a multifaceted recovery and recycling system is necessary to handle both non-hazardous and hazardous materials while prioritizing environmental safety. The system begins with disassembly and sorting at designated recycling centers, allowing for the separation of materials like metals, plastics, glass, and copper. Devices containing hazardous materials, such as lithium-ion batteries in small ICT devices and refrigerants in large EEE items like refrigerators and air conditioners, require specialized recovery systems.

Lithium-ion batteries should be processed using battery recovery systems to safely extract and neutralize harmful chemicals, while refrigerant recovery systems should be in place to capture and dispose of gases from appliances.

Material-specific recycling is crucial in this process. Metals like copper, aluminum, and gold can be recovered through advanced mechanical processes or smelting, enabling their reuse in manufacturing new products. Glass and plastics, commonly found in screens and small and large device casings, should be processed through dedicated recycling plants to convert these materials into new products. Additionally, precious metal recovery techniques can extract valuable materials like gold, silver, and copper from small ICT devices, such as smartphones and laptops, reducing the environmental impact of mining.

The recovery and recycling system for Lamps (Cluster 3) primarily involves disassembly, which allows for the separation of glass, plastic, and aluminum components—highly recyclable materials that can be reused in the production of new products. The glass and metal parts can be processed through glass recycling plants and metal recycling facilities to ensure efficient reuse. However, the key challenge with lamps is the mercury content, which requires specialized handling. A safe disposal program for mercury-containing lamps should be implemented, utilizing mercury neutralization techniques to remove and safely contain the hazardous substance.

Logistical and material supply contracts could generate income by optimizing e-waste transportation and securing competitive pricing for recovered materials through urban mining. Partnerships with eco-friendly processing facilities can earn carbon credits, generating revenue. Corporate social responsibility (CSR) initiatives with multinational companies could fund green projects, enhancing sustainability. Focusing on skill development and job creation in dismantling, sorting, and extraction processes offers socioeconomic benefits, empowering local citizens and keeping operational costs manageable while furthering environmental goals. Promoting General Santos City as a leader in sustainable waste management, mainly through urban mining, could attract global recognition, funding, and further partnerships, reinforcing its position as an innovator.

Data Collection and Monitoring

Effective data collection and monitoring for e-waste management in General Santos City should combine localized strategies with advanced technologies. Barangay-based MRFs can serve as key collection hubs, enhanced by Internet-of-Things (IoT)-enabled smart bins that provide real-time data on e-waste volumes and types (Khan & Ahmad, 2022). This innovative technology enables tracking and sorting, improving recycling efficiency. Integrating this data into a centralized platform will offer valuable insights for better decision-making and resource recovery. Additionally, to strengthen the EPR framework, producers and distributors should report their electronic product sales and recycling contributions, ensuring alignment with local e-waste management goals.

Community engagement plays a crucial role in e-waste management, with digital tools such as mobile apps enabling households and businesses to log e-waste disposals, access collection schedules, and request pickups. Manual sorting at MRFs must be closely monitored through detailed logging systems, supported by periodic audits to ensure the safe handling and efficient categorization of e-waste. Worker safety can be prioritized by implementing regular safety checks and providing protective equipment. Additionally, the Central MRF should document key metrics on recycling, refurbishment, and resource recovery to evaluate operational effectiveness. WTE facilities should use real-time monitoring to measure energy outputs and conversion efficiency for non-recyclable waste, ensuring optimal performance. Public awareness campaigns should be data-driven, using surveys and feedback to assess their reach and impact. All collected data should be consolidated into comprehensive reports, providing decision-makers with insights to identify areas for improvement, optimize resource allocation, and ensure the sustainability of the system.

4.0 Conclusion

This study leverages the integration of Principal Component Analysis (PCA) and Semi-Partial Correlation Coefficients (SPCC) to explore the intricate dynamics of e-waste management. PCA effectively reduces large datasets, such as survey responses or environmental metrics, into principal components that capture the most significant variance. This process highlights key patterns, such as dominant disposal behaviors and material flows. SPCC enhances PCA by isolating the unique contributions of individual variables—such as socioeconomic factors or policy interventions—on e-waste generation and recycling rates while controlling for confounding variables.

This complementary approach ensures that the study uncovers broad trends and specific relationships, providing a multidimensional perspective on e-waste dynamics that can guide the development of targeted, sustainable management practices.

The methodology contributes a synergistic analytical framework that significantly advances the field of sustainable e-waste management. Strengthening the theoretical foundation of e-waste studies offers practical utility for crafting evidence-based, scalable solutions. Future research should address sample size and scalability limitations to refine and validate this framework. Expanding the sample size across diverse demographics and regions will increase the reliability of findings, capturing finer variations in e-waste behaviors and policy impacts. Larger datasets will also enhance the effectiveness of PCA and SPCC, leading to a more comprehensive understanding of system dynamics. Scalability is essential to adapt the framework across various operational levels, from local to national, and conducting comparative regional analyses will ensure its global applicability in addressing e-waste challenges. Future studies should expand to other Philippine cities to validate the framework's scalability.

This study delivers actionable, evidence-based strategies for localized e-waste management. The proposed framework, built on five interconnected pillars—Collection System Design, Processing and Recycling Systems, Data Collection and Monitoring, Formalization of Urban Mining, and Enhanced Institutional Mechanisms—offers a comprehensive approach to addressing e-waste challenges. Each pillar is vital in closing gaps in e-waste management and ensuring efficient collection, recycling, and resource recovery. Addressing policy gaps, the framework advocates for a stepwise strategy that begins with establishing a strong policy foundation, correcting regulatory deficiencies, and considering political dynamics. It then progresses towards gradually adopting advanced technologies and processes to ensure scalable and adaptable systems for effective e-waste handling.

Based on the findings, the improper disposal of broken lamps, particularly those containing hazardous materials like mercury, emerges as a critical urban concern. Density distribution analysis reveals that many consumers are unaware of the hazardous components in lamps, leading to improper disposal and significant environmental risks, such as mercury contamination. PCA and SPCC highlight weak correlations between lamps and other e-waste categories, suggesting that lamps should be treated separately and require specialized disposal strategies. The urgent need to address the *ad hoc* disposal of lamps in homes, establishments, and institutions offers a feasible solution for local governments, considering existing policy gaps, technological limitations, and infrastructure constraints. Governments can introduce targeted policies, such as clear disposal guidelines and mandatory recycling processes, to ensure proper lamp disposal. Technological solutions, such as mercury recovery and specialized recycling facilities, are already available, making the issue solvable with accessible technology. From an infrastructure standpoint, setting up dedicated collection points in high-traffic areas presents a practical solution that would not require significant changes to current solid waste management systems. In contrast, other e-waste categories, such as large appliances and smaller electronics, necessitate more complex infrastructure and technological interventions. Thus, addressing the disposal of broken lamps offers a manageable and immediate solution to mitigate environmental risks, aligning with available resources and capabilities.

5.0 Contributions of Authors

Garcia R.M. was responsible for the study's conceptualization, methodology, data collection, and data analysis. He also handled data visualization, authored the original draft, and contributed to the final revision of the manuscript.

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7.0 Conflict of Interests

The author declares no conflict of interest, confirming that no personal, financial, or professional relationships influenced the research outcomes. The work was conducted with the sole intention of advancing academic knowledge, and no external factors impacted the objectivity or integrity of the study.

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Investigating the Correlation Between Influencing Factors Affecting Students' Interest in Learning and Academic Performance in Mathematics

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Abstract. This study aimed to determine the factors influencing pupils' interest in learning Mathematics and differences in pupils' mathematics performance when grouped according to their subject of interest and subject with difficulty. The respondents of the study were the 183 randomly selected Grade VI pupils of the 10 Elementary Schools in Cluster 9 of the Division of Guihulngan City for the school year 2023-2024. The researcher utilized the descriptive correlational survey method and a validated researcher-made questionnaire. The instrument underwent reliability testing using the test-retest method with a gap of two weeks from its initial administration. Results of the test revealed coefficient stability of 0.95 (teaching pedagogy), 0.93 (utilization of learning resources), 0.91 (assessment strategies), and 0.92 (performance task). The researcher adhered to and observed the ethical guidelines outlined by Foundation University's Ethics Committee. Consultation was pursued to ensure the research issue becomes clearly sound, significant, and ethically proper. The following statistical tools were used: percentage and frequency, weighted mean, mean, Kruskal-Wallis H-test, and t-test. The study then revealed that the following factors have a very high influence on pupils' interest in learning Mathematics: (a) Teaching Pedagogy, (b) Utilization of Learning Resources, (c) Assessment Strategies, and (d) Performance Task. Data revealed that pupils' performance in Mathematics based on grades is within the very satisfactory level. Moreover, a significant relationship exists between the earlier factors that influenced pupils' interest in learning Mathematics and their Mathematics performance. Results further showed substantial differences in pupils' Mathematics performance when grouped according to their subject of interest and subject with difficulty. At the same time, pupils' demographic profiles cannot account for the differences in pupils' Mathematics performance.

Keywords: Factors; Influencers; Interest; Mathematics performance.

1.0 Introduction

The Programme for International Student Assessment (PISA) is a worldwide study that conducts a triennial evaluation of pupils' mathematical proficiency on a global scale. The findings from this study indicated that, across 64 countries, a significant 92.0 percent of assessed pupils fell into the lowest mathematics proficiency category, while only 3.3 percent achieved the highest level. In the Asian context, specifically in Thailand, results from the 2007-2009 national examination on mathematics proficiency revealed that most pupils performed unsatisfactorily, necessitating interventions for performance improvement (National Institute of Educational Testing Service, 2017). Additionally, the Trends in International Mathematics and Science Study (TIMSS) (2003) further affirmed

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this pattern, indicating that among 46 participating countries, the Philippines ranked 42nd in pupil achievement. In terms of academic performance, this finding suggests a prevailing issue of mathematics underachievement in various developing nations, particularly in the Philippines.

According to Dowker (as cited in Rahiol, 2020), there is a concerning trend of pupils in elementary school, particularly 11-year-olds, falling behind in Mathematics. Multiple studies have highlighted this issue as consistent and significant. Many pupils need to reach the expected math level for their age. As cited in Math Goodies (2018), pupils with weak mathematical skills find the subject increasingly frustrating and different and begin to develop Math anxiety. When a child develops a solid mathematical foundation, he will discover fun, engaging, and enjoyable math.

Motivation is the key to unlocking a learner's full potential. As the saying suggests, a driven learner is unstoppable. Their desire fuels active engagement, turning them from observers into knowledge-hungry participants. According to Scivicque (2020), children's natural curiosity sparks a desire to dig deeper and find answers to our questions. This curiosity acts like fuel, boosting our focus and helping us select the most interesting information. For information to stick in our long-term memory, especially when it involves complex strategies like monitoring, explaining, and organizing, we need that extra push from motivation.

The underachievement of elementary pupils in Mathematics is a significant issue that needs to be addressed, especially regarding why they fail to meet expectations. Studies on factors influencing pupils' interest in learning mathematics focused more on pupil-related factors. In a local survey conducted by Rozelaar (2023) relative to pupils' numeracy skills, she emphasized pupils' skills and challenges in learning numeracy. The lack of knowledge on teacher-related learning factors is a significant evidence gap for advanced research in this area. Therefore, this study focuses on teachers' competence in teaching pedagogy, utilization of learning resources, assessment strategies, and performance tasks. As a teacher herself, the researcher is desirous of finding out how competent Mathematics teachers are in influencing pupils' interest in Mathematics, particularly in those areas mentioned earlier. Moreover, this study is significant as it will surface the need for teachers to become learning motivators.

2.0 Methodology

2.1 Research Design

The researcher utilized the descriptive correlational survey method in the sense that it aims to determine the factors influencing pupils' interest in learning mathematics. It is also correlational in that the influencing factors were correlated to pupils' mathematics performance. It is comparative, as pupils' interest in learning Mathematics was compared when grouped according to their profile and Math performance. This method measured the relationship between two variables without the researcher controlling either. It aims to find out whether there is a positive correlation between both variables. This method is considered appropriate in this study because it aims to determine the relationship between the factors influencing pupils' interest in mathematics and their performance.

2.2 Research Locale

The study was conducted in the municipality of Vallehermoso, one of the clusters of Guihulngan City. It is a third-class municipality in the province of Negros Oriental. Vallehermoso has ten elementary schools, two public high schools, and one private high school headed by principals, head teachers, and teacher-in-charge. The study focused on the ten elementary schools: Banban Elementary School, Don Esperidion Villegas Elementary School, Don Julian Dela Viña Memorial Elementary School, Guba Elementary School, Malangsa Elementary School, Malangsa Elementary School-Mampayao Annex, Molobolo Elementary School, Puan Elementary School, Tabon Elementary School, and Vallehermoso Central Elementary School.

2.3 Research Participants

The study participants were the Grade VI pupils of the ten Vallehermoso, Division of Guihulngan City schools, who were subjected to sampling. A sample size of 183 participants was taken from a total of 364, which comprises the Grade VI population during the School Year 2023-2024. The number of participants was distributed

proportionately among the different schools covered in the study. Participants in every school were randomly picked using the list provided by the school.

2.4 Research Instrument

The study used a researcher-made questionnaire. Documentary analysis assessed the pupils' academic performance during the school year 2023-2024. Part I displays the disclosure statement, which proves the students' consent, allowing the researcher to gather data/information about them, provided that confidentiality of data is observed. It also contains the purpose of the study. Parts II and III cover the factors influencing pupils' interest in mathematics. The questionnaire underwent validation and reliability testing. A dry run was conducted using the test-and-retest method with a gap of two weeks from its initial administration to ensure coefficient stability.

For content validity, the researcher sought the assistance of 3 experts who are Master Teachers who are knowledgeable along this line, as well as her adviser, to ensure that the intention of the study was covered. A total of 30 randomly selected pupils from the researchers' school served as the respondents of the dry-run. The result of the reliability test revealed coefficient stability of 0.95 (teaching pedagogy), 0.93 (utilization of learning resources), 0.91 (assessment strategies), and 0.92 (performance task). The experts' suggestions were considered in the refinement of the items in the questionnaire.

2.5 Data Gathering Procedure

The researcher incorporated all the corrections and feedback of the panel members and the research adviser. Then, a letter of request to conduct the study was sent to the Dean of Foundation University Graduate School for recommendation to the school division Superintendent of Guihulngan City. The signed and approved request was presented to the Schools Division Superintendent of Guihulngan City Division and District Supervisor upon the endorsement of the Dean of the Graduate School of Foundation University. Then, the signed and approved letter request was presented to the school principals, head teachers, teachers-in-charge, respective advisers, and subject teachers. Before administering the questionnaire, a consent letter was also sent to the parents for their signature and approval to allow their child to participate in the study. The purpose and importance of the questionnaire and the research itself were explained to the parents. They were informed that the answered questions would not be revealed to anyone and that they would be safely kept for confidentiality. The questionnaire was also retrieved right after the respondents had answered the questions. The results were tallied using MS Excel and were analyzed and interpreted.

2.6 Ethical Considerations

This study kept all information confidential to protect the privacy and dignity of the participants, who were all human subjects. The researcher also avoided any potential risks to the participants. With that, the researcher exercised all relevant ethical considerations throughout the study. To ensure the researcher adhered to the highest ethical standards, following the guidelines established by Foundation University's Ethics Committee. Through consultations, they confirmed that the research question was clear, well-defined, and held significant value. Additionally, the researcher maintained a neutral and objective approach throughout data collection to avoid potential bias or judgment.

3.0 Results and Discussion

Table 1 reveals that the extent of teaching pedagogy's influence on pupils' interest in learning mathematics is "very high," as shown in the average weighted mean of 4.50. Results simply show that pupils are presented in an enjoyable manner, eye-catching, interesting, clear to them, and able to relate to real-life experiences.

Table 1. *The extent of influence of teaching pedagogy on pupils' interest in learning Mathematics*

Indicators	w $\bar{x}$	VD
1. I feel that the games are used to present a new lesson.	4.70	VHI
2. I feel that the utilization of audio-visual facilitates learning, such as PowerPoint presentations.	4.60	VHI
3. I feel that the lessons are interesting and useful to me.	4.54	VHI
4. I feel that the drill lesson is conducted as an opener for the new lesson.	4.46	VHI
5. I feel that the objectives of the lesson are clearly explained at the start of each period.	4.36	VHI
6. I understand that the lessons are related and meaningful to real life.	4.34	VHI
Composite mean	4.50	VHI

Nowadays, students require cognitive and practical experiences throughout their mathematics education to be productive 21st-century citizens. The genesis of this statement can be traced back to the writings of John Dewey, who emphasized the importance of educational activities that include "the development of the artistic capacity of any kind, of special scientific ability, of effective citizenship, as well as professional and business occupations ."Abramovich et al. (2019) also advocate for a shift in math education, prioritizing real-world applications across all grade levels. This approach contrasts with the traditional lecture style, emphasizing rote memorization of mathematical formulas and structures. Real-life applications keep concerned people motivated while learning mathematics. This natural motivation can be considered an age-dependent process from natural childhood curiosity in primary school to genuine intellectual curiosity at the tertiary level.

Herbst et al. (2019) cited that teaching requires substantial explicit knowledge (e.g., factual and conceptual mathematical knowledge) and important inferred knowledge. In addition, Cohen (as cited in Herbst et al., 2019) stressed that teaching is a profession of human improvement done during relationships with pupils. He also adds that if widely understood, mathematics plays a key role in shaping how individuals deal with the various spheres of private, social, and civil life. Research studies have found that effective teachers facilitate learning by genuinely caring about their pupils' engagement. Furthermore, Anthony and Walshaw (2019) work at developing interrelationships that create spaces for pupils to develop their mathematical and cultural identities.

In addition, Filgona, Sakiyo, and Gwany (2020) cite that teachers should be knowledgeable in the content areas and pedagogy for which they are responsible; without this, pupils may face difficulty in their learning. The result implies that students are interested in learning Mathematics if they enjoy teaching-learning activities. They feel that learning is just a sort of fun. They enjoy more game-based instruction. A student who is happy doing a learning task tends to be more enthusiastic and participative.

Table 2 exposes the extent of the influence of learning resource utilization on pupils' interest in learning mathematics. Data revealed a "very high influence" when workbooks/textbooks are used in discussion, when PowerPoint presentations are eye-catching, when materials for project development are provided, and when graphs/charts are presented, garnering a $w\bar{x}$ ranging from 4.32-4.37. On the other hand, utilization of OER (Open Educational Resources) and chalk and board presentation were found to have "highly" influenced pupils' interest in learning mathematics, receiving a $w\bar{x}$ of 4.19 and 4.18, respectively. Summing up, varied learning resources influence pupils' interest in learning to a "very high" extent, as indicated in the average $w\bar{x}$ of 4.29.

Table 2. *The extent of influence of utilization of learning resources on pupils' interest in learning Mathematics*

Indicators	$w\bar{x}$	VD
1. I learn more when workbooks/textbooks are used in the discussion.	4.37	VHI
2. I learn more when PowerPoint presentations are eye-catching.	4.34	VHI
3. I learn more when materials for project development are provided.	4.33	VHI
4. I learn more when graphs/charts are presented clearly.	4.32	VHI
5. I learn more when OER (Open Educational Resources), etc., are utilized.	4.19	HI
6. I learn more when chalk and board are utilized to explain the lesson.	4.18	HI
Composite mean	4.29	VHI

Although textbooks are a traditional component in many higher education contexts, their increasing price has led many students to forego purchasing them and some faculty recourse to seek substitutes. One such alternative is open educational resources (OER). Consequently, Hilton (2020) also cites that recent years have seen a dramatic increase in the use of open educational resources (OER). According to Nyirahabimana (2019), instructional materials serve as teaching and learning aids that help students learn effectively to increase their performance. Using instructional materials in teaching and learning mathematics makes learning more manageable, engaging, concrete, enjoyable, and clear in real-life contexts. In the study, Mabagala (2019) reported that many pupils found mathematics difficult, and he recommended using concrete teaching aids. Moreover, Olayinka (2019) cited that pupils are likely to quickly forget what they hear but remember what they have seen, touched, and interacted with.

According to JukiÄ (2019), teachers' ability to perceive and mobilize existing resources to create productive instructional episodes in the classroom is vital to learning. To a certain extent, this ability is dependent on the curricular resource used. Despite the emergence of various educational resources, textbooks continue to reign

supreme in math classrooms. This teacher, however, does not simply rely on the textbook content. The teacher strategically utilizes it, adapting and improvising lessons to fit her students' needs. Recognizing the textbook's strengths and limitations, the teacher transforms it into a springboard for creating diverse learning opportunities. This approach ensures the textbook serves as a valuable tool, not a rigid script, in the teaching practices. The result implies that strategic instructional devices should be utilized to arouse pupils' interest and curiosity in Mathematics. The result shows that students are more of a visual learner as they are more interested when lessons are presented in visual aids such as PowerPoint presentations, charts, graphs, and other forms of visual aids.

Table 3 reflects the extent of influence of assessment strategies on pupils' interest in learning mathematics. Results revealed a "very high" influence of assessment strategies on pupils' interest with a $w\bar{x}$ of 4.36. The result revealed a "very high" influence, as indicated in the $w\bar{x}$ of 4.40. Data manifest that pupils are very highly interested in learning when test papers are available, problem-solving tasks are familiar to them, assignments can be done within a time frame, performance tasks apply to everyday life, and tasks or work given are within their ability, all receiving very high $w\bar{x}$ ranging from 3.30-3.40.

Table 3. *Extent of influence of assessment strategies on pupils' interest in learning Mathematics*

Indicators	$w\bar{x}$	VD
1. I feel that materials in Math assessments, such as test papers, are always available.	4.40	VHI
2. I feel that problem-solving tasks are similar to what I do in class.	4.38	VHI
3. I feel that the assessment given can be done within a time frame.	4.37	VHI
4. I feel that the performance tasks assigned are useful in everyday life.	4.34	VHI
5. I feel that whatever task or work is given is within my ability.	4.30	VHI
Composite mean	4.36	VHI

Summing up, assessment strategies have a "very high" influence on pupils' interest in Mathematics, as indicated by the high average $w\bar{x}$ of 4.36. According to Haryanti and Saputra (2019), one of the important components of the educational system that measure success and performance is assessment. Various assessment methods throughout math instruction are key to positive learning outcomes. This approach involves ongoing feedback and assessments, not just at the end. This continuous feedback loop helps teachers pinpoint precisely where pupils are in their learning journey. Teachers can adjust their teaching strategies by identifying areas that need more focus. This two-way communication also empowers pupils. Timely feedback allows them to take an active role in their learning by guiding their efforts toward improvement.

Mathematics is one of the fields that has an important role in 21st-century thinking because it involves logical and systematic thinking to solve problems. This means mathematical competencies need to be developed through learning and integrated into knowledge, skills, and attitudes. When learning has facilitated the development of 21st-century mathematical competencies, the assessment must also be able to photograph it (Ketterlin-Geller & Yovanoff, 2019). Vidyastuti, Mahfud, and Darmayanti et al. (2022) emphasized the importance of assessment in the learning process, which can be a benchmark for improving the quality of education. Assessment allows the assessor to interpret pupils' growth and progress regarding the goals and conditions set out in the curriculum. Moreover, Sah et al. (2023) stressed the importance of assessment in an effective teaching-learning activity. This implies that a valid and reliable assessment is needed to measure the results and impact of learning.

According to Even and Watson (cited by Suurtam et al., 2019), assessing pupils' learning is multi-faceted. Making sense of pupils' mathematical thinking through pupil explanations, strategies, and mathematical behaviors is much more complex than might be anticipated and can often challenge teachers' thinking about mathematics and mathematics teaching and learning. The result may further imply that making math assessments relevant to everyday life engages students and helps them see the practical applications of their learning. When pupils understand how math connects to real-life situations, they are more motivated to learn and apply their skills. Knowing they can tackle these real-world challenges boosts their confidence and self-efficacy in math.

Table 4 shows that pupils enjoy learning mathematics when they are in groups, utilizing rubrics to assess performance, when they are aware of their performance, when performance tasks are given regularly, and sometimes when tasks are done individually. All receive very high $w\bar{x}$, ranging from 4.40 to 4.52.

Table 4. *Extent of influence of performance task on pupils' interest in learning Mathematics*

Indicators	$w\bar{x}$	VD
1. I enjoy it when a performance task is done by the group.	4.52	VHI
2. I enjoy when rubrics are utilized to evaluate the performance of the result.	4.50	VHI
3. I enjoy it when pupils are made aware of their performance task.	4.48	VHI
4. I enjoy when performance tasks are given regularly.	4.45	VHI
5. I enjoy it when performance tasks are done individually.	4.40	VHI
Composite mean	4.47	VHI

Amerstorfer and Münster-Kistner (2021) noted that despite the increased individual autonomy and self-regulation, pupils still work together as a team. They set group targets, which can be achieved by synchronizing the efforts of individuals. All pupils fulfill important tasks in their specific roles, generating a sense of co-dependency and togetherness. The pupils identify the learning objectives they wish to pursue and follow a prescribed chain of actions to achieve these goals (Amerstorfer, 2020). Mercer and Dörnyei (2020) added that having clear guidelines and transparent learning objectives, accompanied by an outline of possible steps to complete the task, can facilitate the learning process and pupils' engagement. The result implies that pupils are interested in learning Mathematics if they do Math activities in groups. However, if possible, pupils shall also be given autonomy in working performance tasks to evaluate individual performance. Pupils will also be allowed to assess their learning through rubrics.

Table 5 summarizes the extent of influence of the following factors on pupils' interest in learning mathematics. Data show a "very high" extent of influence of the different factors on pupils' interest in learning Mathematics, as shown in the average weighted mean of 4.41. Specifically, a "very high influence" is reflected in teaching pedagogy ($w\bar{x} = 4.50$), utilization of learning resources ($w\bar{x} = 4.29$), assessment strategies ($w\bar{x} = 4.36$), and performance task ($w\bar{x} = 4.47$). These factors have a significant impact on students' interest in learning mathematics. The result implies that when these aspects are effectively utilized, students will become more engaged, motivated, and interested in Mathematics.

Table 5. *Summary table as to the extent of influence of the following factors on pupils' interest in learning Mathematics*

Indicators	$w\bar{x}$	VD
1. Teaching Pedagogy	4.50	VHI
2. Utilization of Learning Materials	4.29	VHI
3. Assessment Strategies	4.36	VHI
4. Performance Tasks	4.47	VHI
Composite mean	4.41	VHI

According to Vogt et al.'s study (2020), mathematical learning opportunities that are challenging, appropriate, and adaptive to the heterogeneous needs of young children, as well as suitable learning materials, are needed. These educational materials have the potential for good teaching and learning support. Mazana et al. (2019) also affirm in their study that pupils' learning and performance in mathematics are affected by several factors, including pupils' attitudes towards the subject, teachers' instructional practices, and school environment.

Langoban (2020) concluded that though there are a lot more underlying reasons that cause the pupils' learning of Mathematics, there are three most evident emerging themes that summarize the causes of this difficulty: the delivery of instruction by the teacher/instructor, learners' ability and experiences; and school environment and facilities. Many students develop strong feelings about math, either positive or negative. These attitudes are often heavily influenced by their teachers. A skilled math teacher can turn a student's initial dislike of math around, fostering a love for the subject and a sense of accomplishment in mastering challenging concepts. Conversely, a teacher who struggles to explain concepts clearly or makes the learning process overly stressful can solidify a pupil's dislike for math, potentially hindering their future engagement with the subject. Math teachers are crucial in shaping their pupils' mathematical journeys. These findings imply that educators and educational institutions should prioritize and focus on enhancing teaching pedagogy, utilizing learning resources, implementing effective assessment strategies, and incorporating performance tasks in mathematics education. By doing so, they can significantly influence pupils' interest in learning mathematics.

Table 6 presents pupils' performance in mathematics based on grades. Five grading scales range from 90-100, 85-89, 80-84, 75-79, and below 75. Each grading scale is associated with a verbal rating describing the performance

level. The table also shows the frequency (represented by f) and percentage of pupils falling into each grade category. In the “outstanding” rating, grades between 90 and 100, with 69 pupils, accounting for 37.70% of the total. In the “very satisfactory” rating, grades between 85 and 89, with 74 pupils, account for 40.44% of the total. In the “satisfactory” rating, grades between 80 and 84, with 40 pupils, accounting for 21.86 of the total. In the “fairly satisfactory” and “did not meet expectations” rating, no pupils fall into this grade category. Overall, the majority of pupils fall into the “Outstanding” and “Very Satisfactory” categories, indicating a high level of performance in mathematics among the sampled pupils.

Table 6. *Pupils' performance in Mathematics based on grades*

Grade	Verbal Rating	f	%
90 – 100	Outstanding	69	37.70
85 – 89	Very Satisfactory	74	40.44
80 – 84	Satisfactory	40	21.86
75 – 79	Fairly Satisfactory	0	-
Below 75	Did not meet Expectations	0	-
Average Grade		87.62	

Improvements and reforms in educational systems are often thought of as institutional top-down changes that must be consistent to be effective. System and nationwide programs are often directed at increasing school participation, providing easier access to education, and promoting quality instruction. In developing countries, the systemwide reforms often increase the likelihood of school participation but do not always have apparent positive effects on student achievement, measured through grades or test scores. Interventions that address education quality have mixed outcomes, with some programs increasing students’ knowledge, earnings, and achievement while others cannot attain this goal (Trinidad, 2020).

Table 7 illustrates the relationship between the extent to which the factors mentioned earlier influence pupils’ interest in mathematics and their Mathematics performance. Results of the test revealed a significant relationship between the two aforementioned variables as signified by the obtained value of r for teaching pedagogy (0.3227), utilization of learning resources (0.1952), assessment strategies (0.2399) and performance task (0.2356), values of which are more significant compared to its tabular value of 0.1946, at 0.05 level of significance, with 181 degrees of freedom. Hence, the null hypothesis formulated, which states that no significant relationship exists between the influencing factors and pupils’ mathematics performance, is rejected.

Table 7. *Relationship between variables and their Mathematics performance*

Variables	r	Decision Rule	Remarks
Teaching Pedagogy	0.32	Reject H_{01}	Significant
Utilization of Learning Resources	0.19	Reject H_{01}	Significant
Assessment Strategies	0.23	Reject H_{01}	Significant
Performance Task	0.23	Reject H_{01}	Significant

To synthesize, teaching pedagogy, utilization of learning resources, assessment strategies, and performance tasks significantly impact pupils' interest in learning mathematics, which in turn influences their math performance. In short, the four variables are determinants of pupils' performance in Mathematics. As cited by Shahrill and Clarke (2019), pupils need to be asked what teaching methods they find most helpful, and teachers should also understand why pupils prefer these methods. Teachers should also see how pupils feel about the class and how well they learn math. Meanwhile, a study by Pepin and Grave (2019) emphasized that learning resources likewise influence many aspects of their work. These resources influence how teacher plan their lessons, navigate the curriculum, and ultimately deliver instruction in the classroom. They also affect the type of tasks students engage with and how the teachers structure both the teaching and learning process. Resources significantly impact several key aspects of math education, with students being the ultimate beneficiaries.

As to the assessment strategies, Szabo et al. (2020) argued that by asking appropriate questions, teachers can help pupils build up their goal-oriented strategies for problem-solving. Additionally, Albay and Eisma (2021) suggest that the demands of the 21st-century learning environment should be considered, as it is a substantial challenge for teachers to equip pupils with appropriate competencies. The role of teachers needs to go beyond simply delivering facts and figures; instead, they should focus on unlocking students/ potential by implementing effective instructional methods.

Table 8 tests significant differences in pupils' mathematics performance grouped according to their profile. Results of the test disclosed that pupils' profile in terms of sex, school location, and availability of educational gadgets could not account for the difference in pupils' performance as manifested in the obtained p-value for sex (0.304); school location (0.984); and availability of educational gadgets (0.984), values of which are more significant compared to its level of significance (0.05). Data failed to reject the null hypothesis, which states that no significant difference exists in pupils' performance in mathematics, which does not differ significantly regardless of their profile.

Table 8. *Test on significant difference in pupils' Mathematics performance grouped according to their profile*

Variables	n	$\bar{x}$	t	df	p-value	Decision Rule	Remarks
Sex							
Male	77	87.8	1.03	181	0.30	Fail to	No Significant Difference
Female	106	87.3				Reject H ₀	
Ave.		87.6					
School Location							
Highland	65	87.6	0.02	181	0.98	Fail to	No Significant Difference
Lowland	118	87.6				Reject H ₀	
Ave.		87.6					
Availability of Educational Gadgets							
With	146	87.8	0.012	181	0.98	Fail to	No Significant Difference
Without	37	87.4				Reject H ₀	
Ave.		87.6					

This finding concurs with the study of Peteros et al. (2020), which concluded that male and female pupils have the same level of self-concept when it comes to learning mathematics. As to school location, the study of Hertz and Levine affirmed that school location cannot account for the differences in pupils' mathematics performance between pupils from highland and lowland, which does not differ significantly. As regards educational gadgets, the study of Ajayi (as cited by Ichekuku, 2021) supports the finding that educational gadgets cannot account for the difference in pupils' Math performance. Pupils with or without gadgets performed almost the same. To synthesize, the profile of pupils in terms of sex, school location, and availability of gadgets cannot account for the differences in pupils' performance in Mathematics.

Table 9 presents the test results on significant differences in pupils' Mathematics performance grouped according to their profile in terms of subject of interest and subject with difficulty. Data show that the subject of interest can account for the differences in pupils' mathematics performance, as signified by the p-value of 0.0001, the value of which is less than the significance level of 0.05. Thus, the null hypothesis (H_0) is rejected, indicating a significant difference in pupils' Mathematics performance when grouped according to their subject of interest. As can be seen from the table, pupils who have an interest in science perform better in mathematics.

Table 9. *Test on significant differences in pupils' Mathematics performance grouped according to their profile in terms of subject of interest and subject with difficulty*

Variables	n	$\bar{x}$	H	df	p-value	Decision Rule	Remarks
Subject of Interest							
English	46	87.4	40.7	3	0.0001	Reject H_{01}	Significantly Different
Math	52	85.9					
Science	48	90.6					
Filipino	37	86.5					
Ave.		87.6					
Subject with Difficulty							
English	31	88.2	10.9	3	0.0122	Reject H_{01}	Significantly Different
Math	85	86.4					
Science	43	88.4					
Filipino	24	87.2					
Ave.		87.6					

Meanwhile, when pupils were grouped according to the subject they considered problematic, the result yielded a p-value of 0.0122, less than the significance level of 0.05. Thus, the null hypothesis is rejected, indicating a significant difference in pupils' mathematics performance. The result warrants the rejection of the null hypothesis (H_0), which states that no significant difference exists in pupils' Mathematics performance when grouped

according to the subject with difficulty. A thorough perusal of the data would show that pupils who claimed Mathematics as their complex subject also have lower Mathematics performance. From the data presented, it is very obvious that a greater percentage of the pupils find difficulty in learning Mathematics. Filipino was found to be the subject for the pupils. Overall, the results suggest significant differences in Mathematics performance when grouped according to pupils' subject of interest and perceived subject with difficulty.

Simamora and Saragih (2019) highlight the importance of a student's mental state in learning math. This includes students' self-efficacy, which refers to their belief in their abilities to succeed in math across different situations and challenges. Strong self-efficacy can influence a student's motivation, how effectively they tackle problems, and their resilience in the face of difficulties. Conversely, low self-efficacy can lead to students giving up easily, becoming discouraged, and even experiencing math-related stress or anxiety. Meanwhile, Yeh et al. (2019) cited that Mathematics is an abstract subject; hence, it causes many pupils to lose interest, thus resulting in low achievement. Summer (2020) also cited that apart from an abstraction of mathematics causing low interest in pupils, experiencing anxiety about learning mathematics also has contributed to disliking the subject.

4.0 Conclusion

Pupils are motivated to learn Mathematics if the factors that interest them are incorporated into the teaching-learning process, such as interesting and enjoyable teaching pedagogy, visually attractive instructional materials, authentic assessment strategies that will measure their learning progress in class, and using collaborative learning strategy in doing performance tasks. As revealed in the result, however, many pupils claimed Mathematics to be their subject with difficulty. Interest is a key factor in improving the teaching and learning of mathematics. Students' attitudes towards math are shaped by their interest in the subject. Those with a positive attitude enjoy learning math and are likelier to work hard and perform well. Conversely, students who lack interest in math are likelier to skip classes and struggle with the subject.

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The authors confirm the equal contribution in each part of this work. All authors reviewed and approved the final version of this work.

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This research has no conflict of interest of any sort as far as this study is concerned.

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Forms and Functions of Written Codeswitching among College Students on Facebook: Implications on English Language Teaching

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Abstract. The dearth of sociolinguistic investigations into written codeswitching (CS) has prompted the researcher to explore the forms and functions of codeswitching in college students' Facebook (FB) posts using Thurlow's Typology of Communicative Themes and Functions. Further, the study examined how CS may affect English language teaching. The researcher used the descriptive-analysis method as the research design to detail the characteristics of a specific phenomenon, i.e., codeswitching on Facebook. Using convenience sampling, 175 students from two universities participated in the study. Results reveal that intersentential codeswitching is the most prevalent form among college students, followed by intra-word, intrasentential, and tag-switching. Moreover, most of their written code switches were categorized under Informational-Relational Orientation (IRO), indicating that students use Facebook to seek information, ask favors, and build relationships. Employing codeswitching in English language teaching may be considered a pragmatic language behavior for easy interaction and knowledge acquisition, especially for complex concepts in language learning. However, codeswitching should not be considered an alternative technique for teaching the English language, but the use of codeswitching may be allowed in class activities only to a limited extent. English language teachers should integrate online media literacy to familiarize learners with online communication norms and codeswitching patterns, recognize students' diverse language repertoires, and adopt a balanced approach emphasizing fluency in standard English while recognizing the importance of codeswitching in communication.

Keywords: College students; English language teaching; Facebook; Written code-switching.

1.0 Introduction

Codeswitching is a common yet complex linguistic phenomenon in a multilingual community like the Philippines, particularly among Filipino-English bilinguals. This practice arises due to the country's linguistic diversity, with more or less 186 languages (Borlongan, 2023). Codeswitching in the Philippines is not just a random combination of two languages; instead, it is guided, arranged, and regulated by social and cultural norms (Gan, 2010), reflecting the bilingual capabilities of Filipinos who commonly speak Filipino and English. Codeswitching, as described by Myers-Scotton (1993), is when two languages or varieties of the same language alternate or switch in the same conversation. Therefore, it is the process by which speakers shift from one language to another – a linguistic skill honed by bilinguals.

In the Philippine context, Bautista (2004), who did several intensive investigations on codeswitching, views Filipino-English codeswitching as an informal discourse, particularly prevalent “among middle-upper class, college-educated, urbanized Filipinos.” She also stresses that codeswitching is the fastest and most convenient way of saying something to the interlocutor. In addition, codeswitching serves various roles, including precision, transition, comic effect, atmosphere, bridging or creating social distance, snob appeal, and secrecy. Bautista further asserts that Taglish—a blend of Tagalog and English—has become an essential linguistic tool for educated, middle-class Filipinos, influenced by sociocultural factors and modern communication dynamics. Citing Critical Discourse Analysis (CDA), she explains that Taglish results from “hegemonizing tendencies” of modern life and Philippine society. Unlike Japanese, Taglish is not just about borrowing or loaning words from English nor acquiring ready-made phrases; it is about the involvement of switching Tagalog and English languages.

Numerous researchers have identified several kinds of code-switching throughout the years. However, the most notable one is Poplack’s (1980) three categorizations of code-switching: intersentential codeswitching, intra-sentential codeswitching, and tag-switching. Intersentential codeswitching occurs between sentences or between clause levels in two different languages. On the other hand, intra-sentential codeswitching occurs within a sentence or a clause, necessitating central integration of codeswitches in a sentence. Further, it involves considerable syntactic risk because phrases and words from a second language (L2) are incorporated into the first language (L1) within a sentence. Tag-switching involves a tag phrase or a word in one language. It is commonly used in intra-sentential switches (Yletyinen, 2004).

In the study of Riparip (2024), the most prevalent form of codeswitching among college students on social media, particularly Facebook, is intersentential codeswitching. Further, it is a widespread language behavior among this group of individuals. In the said study, it was also found that students who use intra-word codeswitching tend to have poor vocabulary. Meanwhile, McArthur (2015) explains that intra-word codeswitching occurs when a word inserts morphemes in a sentence. This type is commonly used by bilingual speakers when a word has no equivalent in the target language, or the equivalent word is too long to utter, so they use the most efficient and most straightforward one.

Moreover, several studies show that codeswitching can support learning in academic contexts and is a legitimate and potent resource for learning and teaching for bilingual students and teachers (Bernardo, 2005; Borlongan, 2009; Martin, 2006). In one of the recent studies on CS, Borlongan (2021) investigated English-Tagalog codeswitching in English language classes in Metro Manila, the Philippines, concluding that codeswitching is an effective strategy for both teachers and students in learning a target language, even when the switched language is not the target language. Thus, a new typology of codeswitching was proposed, suggesting that distinctions should not be based on whether codeswitching is performed by teachers or students but rather on whether it is intentional or involuntary. Hence, codeswitching should not be seen as detrimental to the learning process, even in the learning of languages. On the other hand, Abad (2011) found that codeswitching in classroom discussions improved students’ understanding of complex subjects like Chemistry and Geometry. This indicates that this linguistic strategy can enhance comprehension. Valerio (2014) observed that students in Quirino province view codeswitching positively, associating it with sharper learning abilities. However, Gan’s (2014) findings suggest excessive reliance on codeswitching might negatively impact English proficiency. Similarly, Ka and Amabarini (2022) demonstrated that codeswitching in Indonesian classrooms improved literacy and engagement in early learners, emphasizing that this practice can facilitate knowledge transfer without causing language deficiencies.

Domede (2023) further supports this perspective, arguing that codeswitching is a practical tool in English language classrooms, especially where students have limited opportunities to practice English outside of class. In addition, Memory, Nkengbeza, and Liswaniso (2018) highlight that codeswitching positively impacts English language learning by helping students learn challenging concepts. It also enables active participation and supports self-expression among those with limited English proficiency. Codeswitching is also prevalent in various social media sites such as Facebook, Tiktok, Instagram, and Twitter (Riparip, 2024; Daulay, 2024; Elhija, 2023; Wulandari & Susylowati, 2021; Sihombing & Meisuri, 2014). These studies explore CS in different digital communication platforms. Wulandari and Susylowati (2021) and Sihombing and Meisuri (2014) investigate the types and reasons for CS on Twitter. Their studies reveal that intersentential switching is the most prevalent type, driven by lexical needs or metaphorical contexts. Daulay (2024) and Elhija (2023) explore similar themes on platforms like

Instagram, TikTok, and WhatsApp, identifying tag-switching and intra-sentential switching as frequent, with motivations ranging from bilingualism to trends. Riparip (2024) broadens the scope to college students' Facebook statuses, highlighting the influence of CS on grammar and vocabulary, though no significant correlation with formal writing ability was found.

The present study was anchored on Thurlow's Typology of Communicative Themes and Functions. In his 2003 discourse analysis on text messaging of the so-called "net generation" or the young people, Thurlow looked into their text messages, analyzed their meanings and communicative intent, and identified and categorized the primary functional orientation of each message. Nine (9) multifunctional categories emerged from the corpora of text messages, i.e., Informational-Practical Orientation, Informational-Relational Orientation, Practical Arrangement Orientation, Social Arrangement Orientation, Salutary Orientation, Friendship Maintenance Orientation, Romantic Orientation, Sexual Orientation, and Chain Messages.

In Informational-Practical Orientation, messages deal primarily with exchanging practical details or straightforward requests for information. In Informational-Relational Orientation, messages deal primarily with more solidary information exchanges or requests for personal favors. Under Practical Arrangement Orientation, while perhaps implicitly recreational, messages deal mainly with plans to meet or the coordination of shopping and other household expeditions. The Social Arrangement Orientation category talks about plans for meeting up, such as recreational planning, going out together for the evening, going to the cinema, and other social arrangements. In Salutary Orientation, messages are non-specific, usually very brief, and often flippant; many are little more than simple, friendly greetings. In Friendship Maintenance Orientation, messages deal with 'friendship work' such as apologies, words of support, and thanks. In romantic orientation, it is usually more so than in the friendship maintenance category, which includes romantic expressions of love, intimacy, and affection. In Sexual Orientation, messages in this category have explicit sexual overtones. Finally, chain messages are comparatively longer epigrams, jokes, or word plays passed on from messenger to messenger.

Given the prevalence of codeswitching in social and academic settings, this study sought to examine the forms and functions of codeswitching on Facebook, specifically among college students. The study addressed the following questions: (1) How prevalent is code-switching in the Facebook statuses of subjects based on intersentential, intra-sentential, tag-switching, and intra-word switching? (2) What are the communicative functions of codeswitching in Facebook statuses, based on Thurlow's (2003) Typology of Communicative Themes and Functions? (3) What are the implications of the study's findings on English language teaching?

2.0 Methodology

2.1 Research Design

The researcher used the descriptive analysis method. Descriptive research focuses on the present conditions that may have different forms, such as an increased quantity of knowledge, a new generalization, and a discovery of a new causal relationship (Calmorin & Calmorin, 2007). Specifically, the researcher used analysis and correlational methods. According to Calmorin and Calmorin (2007), descriptive – analysis describes "the nature of an object by separating it into its parts. It also determines the composition, structure or substructure that occurs as units within a larger structure." In the present study, the descriptive research design was complemented by correlational methods and content analysis to analyze the forms and functions of CS in Facebook posts. It allows for a clearer understanding of the linguistic behavior of the participants, specifically focusing on the prevalence of CS in social media.

2.2 Research Participants

Employing a convenience sampling technique, 175 students from two universities participated in the study, and consent was sought. These college students were former and present students of the researcher, and they have been friends with him on Facebook for more than one year. For the inclusion criteria, only students who actively use Facebook and engage in CS are eligible for the study. In contrast, exclusion criteria exclude those with insufficient Facebook activity or those who do not exhibit CS behavior.

2.3 Research Instrument

The researcher followed Thurlow's Typology of Communicative Themes and Functions in analyzing the study corpora and categorizing the forms and functions of CS within the participants' Facebook posts. Thurlow's typology is best used in the study as it has a structured framework for identifying different types of CS and their communicative purposes. To analyze the forms of CS, the researcher used Poplack's (1980) and McArthur's (2015) categorizations, which are the established classifications in CS studies.

2.4 Data Gathering Procedure

The researcher asked permission from his students to be part of the study. They were also oriented afterward about the study he was conducting. Then, the researcher informed the students that their information on Facebook would be treated confidentially and only used for the study. After ensuring that all students were adequately apprised of the research considerations, he started collating Facebook data that would serve as his corpora. The researcher copied and pasted all the statuses of the students and selected all that used codeswitching. Statuses written purely in Filipino, Tagalog, English, or any dialects were discarded. Only those using codeswitching were included in the database that the researcher will develop. Each subject was labeled with numbers (1, 2, 3, 4, 5, etc.). The researcher analyzed all the corpora when the necessary and complete data were collected. He used a grid to make sure that everything was accounted for. Judgment for each codeswitch was based on the definition of each form of codeswitching and its functions. The same grid with different labels was used for students' CS functions. Language experts checked the analysis of the corpora for comments and suggestions.

2.5 Data Analysis

The statistical tools used in interpreting and analyzing the data were the frequency and percentage formula to determine the distribution of respondents' profiles and the frequency of different forms and functions of CS in Facebook posts. Mean calculations were used to analyze the data. These tools were appropriate for summarizing the data and identifying trends in CS behavior. To make the findings more reliable, the researcher consulted language experts to review the analysis and provide feedback on the categorization and interpretation of CS instances to ensure the data interpretation's accuracy.

2.6 Ethical Considerations

Ethical considerations are essential in conducting the study to ensure that participants' rights are prioritized and not violated. The participants received an informed consent form stating the study's purpose, procedures, potential risks, and benefits. Thus, they voluntarily agreed to participate. Furthermore, the researcher adhered to confidentiality principles, safeguarding participants' identities by securely storing all data. The researcher ensured that the highest standards of integrity were upheld by conducting the study transparently, avoiding data manipulation, and accurately reporting the findings.

3.0 Results and Discussion

3.1 Forms of Codeswitching in the Facebook Statuses of the Subjects

As shown in Table 1, 1641 codeswitches were found in the corpora of the study. Most student subjects (792 or 48.26 percent) used intersentential codeswitching in their Facebook statuses. Thus, it is the most prevalent codeswitching on Facebook. Intra-word codeswitching yielded 425 or 25.90 percent of the total codeswitches, followed by intrasentential codeswitching, which got 394 or 24.01 percent, and only 30 or 1.83 percent of the subjects used tag-switching.

Table 1. Prevalent forms of codeswitching

Forms of Codeswitching	Mean	Frequency	Percentage (%)
Intersentential	4.53	792	48.2
Intra-sentential	2.26	394	24.0
Intra-word	2.43	425	25.9
Tag-switching	0.17	30	1.83

Poplack (1980) states that "intersentential switching involves a switch at a clause or sentence level in different languages." This switching occurs between sentences and clauses and requires more fluency in the two linguistic systems used in the conversation. The following were some instances of intersentential codeswitching on the subjects' Facebook posts:

- (1) *I miss you bro, *name withheld*! Naalala kita bigla. (I miss you bro, *name withheld*! I suddenly remembered you.)*
- (2) *Home at last. Salamat guys. Good night. (Home at last. Thank you, guys. Good night.)*
- (3) *Honestly, nagtatampo ako sayo. Jk pero love padin kita. Miss you see you soon love. Dami mo dapat ikwento sa akin. Okay? Luv u. (Honestly, I'm upset with you. Just kidding, but I still love you. Miss you, see you soon, love. You have a lot to tell me. Okay? Love you.)*
- (4) *What a game! Parang scripted. (What a game! It seems scripted.)*

This finding implies that Facebook users prefer switching languages at clause or sentence levels for convenience and easy understanding. The use of codeswitching at any syntactic level entails good or average knowledge of two languages being switched. When a person who uses intersentential codeswitching switches to another language, the Matrix Language (ML), the dominant language in the discourse, follows the rules of other languages. In sentence 1, the Facebook user switches at the sentence level, which starts in English as the matrix language and ends in his native tongue, Filipino, or what is termed bilingualism as Embedded Language (EL). Hidayat (n.d.) analyzed codeswitching on Facebook comments and found that intersentential codeswitching is also the most dominant code-switching on Facebook. In his study, lexical need is why Facebook users alternate languages. They use this speech switching to maintain the flow of conversation and to look for an exact term of ML or EL that does not have an equivalent in the used language.

On the other hand, intra-word codeswitching came second among the types of switches. McArthur (2015) explains that intra-word codeswitching occurs within a word, inserting morphemes in a sentence. This can be attributed to the fact that Filipinos usually combine morphemes in a word or sentence. This type is commonly used by bilingual speakers when a word has no equivalent in the target language because of cultural limitations, or the equivalent word is too long to utter, so they use the most efficient and straightforward one.

Listed below were examples of intra-word codeswitching found on subjects' Facebook statuses:

- (1) *Ma-try nga ito. (Let me try this.)*
- (2) *Panget! Gusto ko yung picture natin nato! (Ugly! I like this picture of us!)*
- (3) *Yung feeling na andami naten gustong puntahan pero di makapunta dahil alang budget saklap friend, hahahaha. (The feeling when we want to go to many places but cannot because of the budget. So sad, friend, hahaha.)*
- (4) **name withheld* sorry naaaa! Namimiss kasi kita eh. (*name withheld* I am so sorry! I miss you.)*
- (5) *Hi, baby! Yung namesmerized ka at natarstruck sa kagwapuhan niya. (Hi, baby! When you are mesmerized and starstruck by his good looks!)*
- (6) *Nakaka-high blood ang traffic!! (The traffic is making my blood pressure rise.)*

It can be noted that students often use intra-word switching to facilitate their lack of vocabulary words in their native tongue or their second language. In 1980, Poplack studied Spanish-English switches, which became the landmark in codeswitching. This study led to the development of free-morpheme constraints and equivalence constraints. Free morpheme constraint says that "codes may be switched after any constituent in discourse provided that constituent is not a bound morpheme (Poplack, 1980, p. 585)." However, many critics say that Poplack's model on constraints is "insufficiently restrictive"; thus, many exceptions should be considered (Belazi, Rubin, & Toribio, 1994).

In the model, only the free morphemes can be switched with other languages; bound morphemes cannot be. However, in sentences 1-6, bound morphemes are combined with the English words to produce a codeswitched word. One reason for this restriction is that Poplack based her theory on the corpora she gathered, which were Spanish-English discourses, and this does not apply to other switch codes in different countries, such as the Filipino-English codeswitching. The intra-word codeswitching implies that students codeswitch because they have a deficiency in vocabulary words, which can be attributed to a decline of interest in reading, which was validated by the study of Mareva and Mapako (2012) that language deficiency is the reason why people of Zimbabwe switch from Shona to English or vice-versa.

Intrasentential codeswitching occurs within a sentence or a clause, and Yletyinen (2004) explained that this requires a significant combination of codeswitches in a sentence. It involves syntactic risk because phrases and words from L2 are incorporated into the first language within a sentence. This means that a person's Matrix Language (ML) will be fused to the Embedded Language (EL) and then ML and EL again. Language experts say intrasentential codeswitching necessitates competence in both languages and linguistic systems. Intrasentential codeswitching is considered the most challenging form of codeswitching because this, according to Romaine (1985), is "avoided by all" since the interlocutor thinks that when they use intrasentential codeswitching, they violate syntactic rules.

Presented below were occurrences of intrasentential codeswitching on the students' Facebook posts:

- (1) *And so I met this guy, at first hindi pa naman talaga ako ganun ka-clingy sa kanya to the point na nami-miss ko siya agad. But later on, sa tuwing uuwi na siya or maghihiwalay lang kami saglit kasi may class yung isa sa amin, minsan nga bibili lang siya tapos ang tagal, nami-miss ko na siya. (And so I met this guy, at first, I wasn't really that clingy to him to the point that I miss him right away. But later on, every time he goes home or we part ways briefly because one of us has a class, sometimes he just goes to buy something and takes a while, I already miss him.)*
- (2) *Simple lang ang nakasulat pero bukod sa nahipo (natouch) ako, eh talaga namang it struck me through the heart up to the lungs. (The words are simple, but aside from being touched, it struck me through the heart up to the lungs.)*
- (3) *I have this feeling na ugh ang hirap i-explain pero grabe ang sarap pala talaga mabuhay. Thank you, Lord! (I have this feeling that, ugh, it is hard to explain, but it feels good to be alive. Thank you, Lord!)*
- (4) *Sa August, I want a new BAG or next week na?? hihihihihihii. (In August, I want a new BAG, or should I have it next week already?? hihihihihihii.)*

Table 2 presents the different functions of the codeswitches of the students' in their Facebook statuses. Using Thurlow's model, which was developed in 2003, the researcher analyzed 1202 codeswitches found in the corpora of the study. There were only eight (8) functions since Sexual Orientation (SO) did not appear on the corpora of the study. In addition, SO talks about intimate and private sexual messages, which are not allowed on Facebook since it is posted publicly. Most of the subjects' code switches were categorized under Informational-Relational Orientation (IRO) with 450 or 37.44 percent, and Friendship-Maintenance Orientation (FMO) came second with 242 or 20.13 percent. Based on the results, Social-Arrangement Orientation (SAO) and Salutory Orientation (SO) shared almost the same number of code switches, 84 (6.99 percent) and 83 (6.91 percent), respectively. In addition, Chain Messages (CM) had 27 switches, or 2.25 percent.

Table 2. Functions of codeswitching in the subjects' Facebook statuses

Functions of Codeswitching	Frequency	Percentage (%)
Informational-Relational Orientation (IRO)	450	37.4
Practical-Arrangement Orientation (PAO)	109	9.07
Informational-Practical Orientation (IPO)	159	13.2
Friendship-Maintenance Orientation (FMO)	242	20.1
Social-Arrangement Orientation (SAO)	84	6.99
Salutory Orientation (SO)	83	6.91
Romantic Orientation (RO)	48	3.99
Chain Messages (CM)	27	2.25

There are significant differences between the results of the present study and that of Thurlow's (2003) study, which revealed that the text messages of young people were mainly under Friendship-Maintenance Orientation (FMO) which yielded the highest percentage (28 percent), followed by Salutory Information (17 percent), Practical-Arrangement Orientation (15 percent), Informational-Practical Orientation (14 percent), Social Arrangement Orientation (9 percent), Romantic Orientation (9 percent) Informational-Relational Orientation (8 percent) Sexual Orientation (3 percent), and Chain Messages (2 percent). However, the present study's dominant orientation is Informational-Relational Orientation (IRO) and Friendship-Maintenance Orientation (FMO).

This implies that students use Facebook to ask for personal favors from their virtual friends. They also use this tool to build interpersonal relationships in the online world. This can be corroborated by Bosco's (2007) study on the text messages of the people of Hong Kong, which revealed that interpersonal relationships are often the topic of text conversations. Most of the statuses of the students aim to establish camaraderie among netizens. It develops

their friendships through posting feelings, emotions, and happiness on Facebook and exchanging messages that are personally important to them. Hence, these college students send congratulatory messages, support their friends, wish well, offer help, invite friends to a party, and so on.

Table 3. *Illustrative examples of the functions of the subjects' codeswitching*

Themes	Examples
Informational-Relational Orientation (IRO)	Umabot na hanggang ulo ang baha sa tapat ng subdivision nmh. Please pray for the safety of everyone. #GodBless (Flooding in front of our subdivision has reached head level. Please pray for the safety of everyone.) #GodBless)
Practical-Arrangement Orientation (PAO)	Ako busy maglinis ng kwarto hahaha. (I'm busy cleaning my room hahaha.)
Informational-Practical Orientation (IPO)	Gagawa kami ng short story sa skul ^_^ any topic ivi-video? May dialogue may scene yung topic na naisip naming ng co-director ko na bes ko ay magbestfriend na ng kamalabuan dahil my karelasyon na ung bes nya (We're creating a short story for school ^_^ any topic suggestions? The topic we thought of with my co-director is about best friends who drifted apart because one of them already has a romantic relationship.)
Friendship-Maintenance Orientation (FMO)	Happy Birthday, *name withheld* enjoy your special day! Cute cute mo para kang sanggol!! Hehehe God bless you and stay ind and pretty J love lots (Happy Birthday, *name withheld* enjoy your special day! You're so cute, you look like a baby!! Hehe God bless you and stay kind and pretty J love lots)
Social-Arrangement Orientation (SAO)	MAG-TRAITRAINING NA PO TALAGA AKO MAMAYA Date daw after exam. Hahahaha! TARA sa #VictoryMetroEast!!! PUNTA KAYOOOOO! SAMAHAN KO KAYO)) ALAM NATHIS THURS 5PM/ FRI 5PM/7PM Salutary Orientation (SO) Goodluck on your exam mama.. birthday wish ko makapasa ka sa exam mo love you.. haha Hi miss! Bata ka palang pala miss universe ka na! TBC! Miss ko na kayo!
Romantic Orientation (RO)	Sweetest. You still never failed to surprise me and make me smile. Thank you so much for the effort mahal ko! Kahit di ka nakapunta kahapon, bawing bawi naman. Haaays. So talagang kinalkal ko siya! Haha. Favourite part ko dyan ay yun kitkat, potchi at trollissss!!! Lalong lalo na yung cute na cute na bunny may mayayakap na ako tuwing namimiss kita!! I love yo I love you I love you sooo much! Thank you miss na ule agad kita!! HUUUUUG! PS kala ko sapatos na talaga na like. Nagexpect ako, hahahaha. Jk! Thank you ule. Mwaa! J
Chain Messages (CM)	Boy1: pre, ozone layer k aba? Boy 2: bakit pre? Boy 1: eh kasi pag wala ka, pano na ang mundo? Boy 2: SH*T! Pre! Kilig ako, labyu! Nyahaha "Ang forever, tinatrabaho."

3.2 Implications of English Language Teaching

Determining the prevalent forms and functions of written code-switching among college students may significantly impact the teaching of the English language. With the advent of social media, young people, especially college students, rely primarily on codeswitching as their mode of communication on different online platforms. Further, CS also plays an essential role in virtual communication, especially in memes, jokes, online shopping, online games, and other digital interactions. Identifying the forms and functions of written codeswitching may better inform English teachers to meet students' communicative needs in diverse situations.

The field of language education has to recognize codeswitching as a natural and prevalent phenomenon in the use of language. While Bautista (2004) stressed that CS is complex speech behavior, codeswitching is still the fastest and most convenient way of saying something to an interlocutor. This is why CS is the go-to language behavior of young people online. English teachers should also acknowledge CS as a valid communication rather than viewing it as a deviation from standard English. They can include CS in language learning activities to encourage linguistic flexibility and intercultural competence. They can create a more inclusive and culturally responsive classroom environment.

The results also reveal that intersentential codeswitching is the most prevalent among the types of codeswitching. Yletyinen (2004) explains that intersentential codeswitching occurs between sentences or clause levels in two languages. This implies that teachers should develop lessons that explicitly teach techniques for transitioning between languages at the sentence level. This may consist of identifying boundaries between languages, understanding context signaling codeswitching, or altering language in different communicative situations.

Another study finding is the common usage of Informational-Relational Orientation (IRO) in their Facebook posts, dealing mainly with more solidary information exchanges or requests for personal favors (Thurlow, 2003). IRO serves specific communicative functions such as seeking information or establishing peer relationships. In line with this finding, English language instruction can take advantage of it by including authentic texts that integrate the cultural knowledge and communication skills required for successful interaction among speakers who share different first languages or are bilinguals or communicative tasks that mirror real-world interactions on social media platforms.

However, it is essential to maintain a balanced approach to incorporating codeswitching into English language teaching. While codeswitching can facilitate communication and comprehension, it should not overshadow the importance of mastering standard English grammar, syntax, and vocabulary. English language teachers should provide explicit instruction on when and how to appropriately code-switch, emphasizing the importance of code-switching as a strategic tool rather than a linguistic crutch. In brief, the findings highlight the importance of identifying, determining, and understanding written code-switching in social media platforms. Thus, integrating codeswitching into English language teaching practices is encouraged. Pedagogically, codeswitching should not be considered an alternative technique for teaching language, but the use of codeswitching may be allowed in class activities only to a limited extent. In addition, retooling of teaching strategies in English lessons should be given primordial significance. Communicative tasks and topics must be suitable for the future needs of 21st-century learners and their linguistic abilities.

4.0 Conclusion

The study confirmed that codeswitching is a language phenomenon usually among young adolescents online, especially on Facebook. This language occurrence indicated the use of popular language, as reflected in their online posts and updates. It is now said to be a dominant communicative culture in the virtual world. Moreover, the findings reveal that intersentential codeswitching is the most prevalent form among college students. This implies that students seamlessly move between languages (L1 to L2 or L2 to L1) to express themselves appropriately in digital discourse.

On the other hand, Informational-Relational Orientation (IRO) is the most commonly used function on Facebook, suggesting that students often use language alternation to perform specific communicative functions, such as asking for support or help, finding or looking for information, or building relationships, albeit virtual. This illustrates how CS is a pragmatic language behavior, i.e., students use it strategically to meet specific communicative goals such as requesting help, providing information, or sustaining social relationships. Based on these findings, recommendations for improving English language teaching are proper. Language teachers should introduce digital or online media literacy to the students to ensure that learners get familiar with and understand online communication norms, including codeswitching. This aligns with the Vowel Approach in Online Media Literacy by Riparip (2022), which includes awareness, education, integration, optimization, and utilization (Riparip & Caballes, 2024).

Through the lessons and classroom activities, teachers should assist language learners in critically exploring digital texts and scrutinizing codeswitching patterns, mainly so that CS is used by the students in virtual environments with versatility. Further, language teachers should acknowledge the variety of language repertoires students use due to the onset of social media. Hence, teachers can create inclusive language learning environments where students feel empowered to improve their language skills, both online and offline. As Bernardo (2005) and Borlongan (2012) have long espoused, CS should not be frowned upon by different stakeholders in the education sector, such as policymakers, administrators, and managers. Despite this approach, they contend that such a bilingual policy should not be made legal in Philippine classrooms. Instead, “relax our language prescription in formal school environments to allow students and teachers to benefit from this efficacious resource of developing knowledge and understanding” (Bernardo, 2005, p.165).

In addition, there must be an integration of pragmatic skills into English language teaching so that students can make use of CS strategically in various communicative situations such as role-playing, simulations, or daily-life immersions to practice using CS for specific communication purposes like seeking help, giving information or establishing rapport with fellow students. English teachers should adopt a balanced approach whereby fluency

in standard English is emphasized and recognize the importance of codeswitching in communication. For example, teachers must give explicit instructions on when and how to convert one language to another by ensuring their students know the social context in which code-switching is acceptable and effective. In conclusion, when teachers and students use CS, this is not an indication of language deficiency but a strategic employment of the linguistic resources available to them to achieve their ultimate goal, i.e., effective learning (Borlongan, 2012).

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7.0 Conflict of Interests

The author declares that he has no conflicts of interest as far as this study is concerned.

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Teachers' Competence and the Performance of Grade 9 Technology and Livelihood Education Students in Achieving Most Essential Learning Competencies (MELCs)

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Abstract. This research study was conducted to determine TLE teachers' level of competence and the performance of Grade 9 in achieving MELCs in Cookery in District V of the Schools Division of Quezon City. Significant relationships between these two variables were also tested. The descriptive-correlational study involved randomly selected 283 Grade 9 students during the School Year 2022-2023. Simple Random Sampling Probability Method was also used in the study. The data was gathered through a questionnaire and analyzed using Weighted mean and Spearman's rank correlation coefficient. The researcher concluded that TLE teachers demonstrate strong competence in helping the students learn, know, and understand what their teacher teaches, becoming better teachers every day, and engaging the community. Likely, students demonstrate a significant improvement in knowledge, skills, and attitude in MELCs in Cookery. In addition, there is a significant relationship between TLE teachers' competence and students' MELCs in Cookery regarding knowledge, skills, and attitude. It was recommended that teachers attend professional development training to enhance their competence and increase students' performance. They may also establish stronger engagement with the community to improve the MELCs in Cookery by collaborating with parents and guardians who can help when students are applying what they have learned from the school to their respective homes. Moreover, students may attend TESDA-initiated, school-initiated, and self-initiated training on Cookery that would enhance their skills, particularly in labeling food according to industry standards, preparing and presenting salads and dressings attractively, and packing food items in compliance with occupational health and safety procedures.

Keywords: Cookery; Most Essential Learning Competencies (MELCs); Southeast Asia Teachers Competency Framework (SEA-TCF); Teachers' competence; Technology and Livelihood Education (TLE).

1.0 Introduction

Competencies are skills, knowledge, behavior, and attributes that enable effective or better job performance (SEA-TCF, Teachers' Council of Thailand, 2018). It was mentioned that dealing with the ever-changing educational context requires a teacher to use a variety of competencies, making teaching a complex job. In the Philippines, teachers' competence is described in the Philippine Professional Standards for Teachers as per DepEd Order No. 42, s. 2017. It stipulates expectations from teachers at each stage, attain proficiency, develop student learning outcomes, and achieve quality education.

In the field of TLE, teachers are expected to be competent and qualified and possess technical, vocational, and pedagogical competencies that can produce globally competitive students. However, problems identified by TLE teachers were human, pedagogical, and material aspects, including limited resources, practical activity, constraints, and the financial background of students (Barcelona, Daling, Doria, Balangiao, Mailes, Chiang & Ubatay, 2023). Due to changes in education brought by distractions like pandemics, typhoons, and heat waves, there is a need to maintain the acquisition of the most essential learning competencies in all subject areas, which challenge teachers' competencies to deliver quality teaching and learning. Lleo (2022) stated that the Department of Education released the Most Essential Learning Competencies (MELCs) to achieve content and performance standards and develop lifelong learning skills amidst crises. In TLE, MELCs focus on preparing tools and materials for the task, performing measurements and calculations, interpreting drawings and plans, maintaining tools and equipment, and practicing occupational health and safety.

Related studies have been conducted regarding teachers' competence. Dr. Zabala and Adelante (2018) revealed that TLE teachers' level of competencies is satisfactory and considered to be experienced based on National Competency-Based Teacher Standards (NCBTS) at Gapan City, Nueva Ecija. However, their identified weaknesses were their incapacity to exhibit proficiency with ICT for teaching and learning, convey an understanding of the material objectives for the classes that are suitable for the students, develop and make use of creative and appropriate lesson plans, and establish a setting for learning that adapts to the aspirations of the community and promote purposive study. Moreover, Alsong (2019) disclosed that Surigao del Norte TLE teachers expressed satisfaction with helping students learn technical skills, evaluating learning, managing the classroom, establishing connections with stakeholders, and analyzing students' learning outcomes. Although they could have done better in written assignments and quarterly tests, the students outperformed themselves in practical work.

This evidence showed a limited need for more literature focusing on TLE teachers' competence in connection with the essential learning competencies of the students. Hence, this encouraged the researcher to conduct this study, particularly on the Cookery, TLE course, which is expected to be the research locale. This study aimed to determine the teachers' level of competence as assessed by their students and respondents' description of their MELCs in Cookery. It also aimed to determine the significant relationship between the teachers' level of competence and the students' perceived MELCs in Cookery in selected Secondary Schools in District V, Quezon City.

2.0 Methodology

2.1 Research Design

This research study used the quantitative method to collect and analyze numerical data (Bhandari, 2023). The researcher also used the descriptive correlational research method, explaining the relationship between two or more variables without making any claims about cause and effect (Bhat, 2023). Descriptive correlational research was essential for this study to determine the significant relationship between the teachers' level of competence and the students' perceived most essential learning competencies (MELCs) in cookery.

2.2 Research Locale

The study was conducted in selected secondary schools in District V Quezon City, namely Doña Rosario High School, Lagro High School, Novaliches High School, Sta. Lucia High School and North Fairview High School.

2.3 Research Participants

The target respondents for this study were Grade 9 students at selected secondary schools in District V Quezon City. The researcher applied Cochran's formula to determine the sample size. The Finite population correction formula was also used to compute the sample size. Using the formulas, the researcher obtained a sample size of 268. However, 283 students participated in the survey. The researcher used the Simple Random Sampling Probability Method to gather data from the respondents. This sampling technique refers to a subset of a statistical population in which each subset member has an equal probability of being chosen. (Hayes, 2023) The researcher randomly chose Grade 9 students to participate and answer the survey questionnaires.

2.4 Research Instrument

The researcher used a research-made questionnaire and aligned it with the Southeast Asia Teachers Competency Framework (SEA-TCF) and Most Essential Learning Competencies (MELCs). The research instrument is

comprised of two parts. The first part consisted of Teachers' Competence. The areas of competence and their respective indicators are aligned with the Southeast Asia Teachers Competency Framework (SEA-TCF). There is a total of 28 indicators on this part. The second part consisted of MELCs in Cookery as described by the respondents. The respondents rated a total of 21 items.

2.5 Data Gathering Procedure

Initially, the researcher requested an Ethics Clearance from Polytechnic University of the Philippines. Once the clearance was secured, she sought permission from the Schools Division Office of Quezon City to conduct research. Upon the release of SDO's permit, the researcher went to the target schools to perform the actual data gathering. The researcher coordinated with the principals, TLE Department Heads, and concerned teachers during the exact distribution of the survey questionnaire to the TLE students. With the assistance of TLE teachers, the researcher personally requested the respondents to answer the survey questionnaire. Instructions were provided, and students were allowed to ask questions. Participants were given around 30 minutes to answer the questionnaire. The researcher used a zipgrade as a tool for data accuracy and efficiency.

2.6 Ethical Considerations

This research study passed the PUP Research Ethics Committee (REC) evaluation, as required by the Philippine Health Research Ethics Board (PHREB). All the data gathered were treated with utmost confidentiality in conformance with the Data Privacy Act of 2012 (Republic Act No. 10173).

3.0 Results and Discussion

3.1 Teachers' Level of Competence as Assessed by their Students

Table 1 presents the students' assessment of the teachers' level of competence in the indicator, knowing and understanding what my teacher teaches. The table shows that the overall mean is 3.17, which is interpreted to a great extent. This means the students find that teachers demonstrate an exceptionally high competency in teaching cookery. Notably, the item with the highest mean, 'My teacher in cookery shares multiple sources of information.' (M=3.34), signifying 'to a great extent'. Conversely, the item that got the lowest mean, 'My teacher in cookery relates the subject content to current local or global events to make it more interesting and relevant.' (M=2.98), interpreted as 'to a large extent'.

Table 1. Students' assessment of the teachers' level of competence in "know and understand what my teacher teaches"

Indicators	Mean	Interpretation
1. My Teacher in Cookery shows mastery of the subject content.	3.25	To a great extent
2. My Teacher in Cookery shares multiple sources of information.	3.34	To a great extent
3. My Teacher in Cookery uses different methods and approaches to enrich my knowledge relevant to the subject content.	3.15	To a great extent
4. My Teacher in Cookery relates the subject content to current local or global events to make it more interesting and relevant.	2.98	To a large extent
5. My Teacher in Cookery allows me to observe and participate in the practical demonstrations of cooking techniques.	3.22	To a great extent
6. My Teacher in Cookery provides clear explanations to help me understand the subject content.	3.23	To a great extent
7. My Teacher in Cookery encourages questions and discussions to ensure I grasp the concepts taught.	3.04	To a great extent
Overall Mean	3.17	To a great extent

This data implies that cookery teachers are proficient in knowing and understanding what they teach. Among the indicators, sharing multiple sources of information stands out. It enhances critical thinking among students since they may compare information from multiple sources. Using multiple sources guarantees the accuracy of the information by confirming information from different sources (Wafula, 2023). Teachers may focus on relating the subject content to current local or global events to make it more interesting and relevant since it was assessed as the lowest among others. Incorporating current events related to the lessons captures students' attention during discussion while strengthening awareness about local and global issues (Ferlazzo, 2020).

Table 2 shows the students' assessment of the teachers' level of competence in the indicator, which helps the students learn. Notably, teachers exhibit competence to a great extent in creating a safe, healthy, and secure learning space (M=3.42) as assessed by their students. Further, teachers portray competence to a large extent in using ICT tools to support students' learning (M=2.70). Overall, students concluded that their teachers possess

competence to a great extent in helping students learn ($M=3.18$). Thus, they find that their teachers demonstrate an exceptionally high competency in teaching cookery.

Table 2. *Students' assessment of the teachers' level of competence in "help the students learn"*

Indicators	Mean	Interpretation
1. My Teacher in Cookery sets and communicates challenging yet achievable goals for her students.	3.18	To a great extent
2. My Teacher in Cookery encourages and supports her students' aspirations, motivation, and willingness to learn.	3.38	To a great extent
3. My Teacher in Cookery uses appropriate teaching and learning strategies to develop her students' creative, innovative, collaborative, and critical thinking skills.	3.25	To a great extent
4. My Teacher in Cookery uses ICT tools to support students' learning.	2.70	To a large extent
5. My Teacher in Cookery creates a safe, healthy, and secure learning space.	3.42	To a great extent
6. My Teacher in Cookery designs assessment strategies to improve, enhance, and support student learning by evaluating students' progress and planning lesson content accordingly.	3.12	To a great extent
7. My Teacher in Cookery constantly assesses her students' work and provides helpful and timely feedback.	3.19	To a great extent
Overall Mean	3.18	To a great extent

This result indicates that teachers are competent in creating a safe, healthy, and secure learning space. Hawthorne (2024) stated that a positive learning environment can boost enjoyment and engagement among learners while improving their academic performance. Teachers may exert effort to integrate digital tools more fully to equip students with essential skills, enhance engagement, and improve learning outcomes (Telefonica, 2024).

Table 3 illustrates the students' assessment of the teachers' level of competence in the indicator, engage the community. Notably, the teachers are competent in supporting inclusive behavior among students, promoting acceptance, value, and respect ($M=3.30$). Further, it was assessed by the students that their teachers also exhibited competence to a large extent in collaborating with parents and guardians to establish a supportive partnership in the learning process ($M=2.74$). Generally, it was concluded that teachers competently exhibited to a great extent in engaging the community ($M=3.01$). Hence, students find that their teachers demonstrate an exceptionally high competency in teaching cookery.

Table 3. *Students' assessment of the teachers' level of competence in "engage the community"*

Indicators	Mean	Interpretation
1. My Teacher in Cookery collaborates with local nutritionists or health professionals to incorporate elements of nutrition education into the subject being taught.	2.83	To a large extent
2. My Teacher in Cookery establishes a professional learning community among educators, facilitating a supportive network that enhances the overall quality of teaching.	2.99	To a large extent
3. My Teacher in Cookery teaches her students to connect and apply what they learn daily.	3.21	To a great extent
4. My Teacher in Cookery uses community-based resources for students' learning benefits.	3.16	To a great extent
5. My Teacher in Cookery collaborates with parents and guardians to establish a supportive partnership in the learning process.	2.74	To a large extent
6. My Teacher in Cookery actively participates in community outreach programs and promotes similar initiatives to students.	2.86	To a large extent
7. My Teacher in Cookery supports inclusive behavior among students, promoting acceptance, value, and respect.	3.30	To a great extent
Overall Mean	3.01	To a great extent

Teachers emphasize fostering inclusive behavior and promoting acceptance, value, and respect among students, but greater collaboration with parents and guardians could strengthen the supportive learning partnership. This data aligns with Smith's (2023) statement that establishing clear communication expectations creates a welcoming environment for students to feel included and appreciated. Moreover, when parents and guardians take an active role in education, students feel the connection between their home and school lives, which increases motivation and helps them succeed academically (Moore, 2024).

Table 4 shows the students' assessment of the teachers' level of competence in the indicator, becoming a better teacher every day. It can be gleaned from the table that the overall mean is 3.05, which is interpreted to a great extent. This means that the students find that teachers demonstrate an exceptionally high competency in teaching cookery. The students shared that their teachers demonstrated competence to a great extent in speaking, interacting, and listening to other teachers with respect and openness to help each other get better at teaching the same subject ($M=3.24$). Conversely, though it received the lowest rating from students, they still believe that their teachers explore exciting and creative ways to make learning about cooking more engaging for students ($M=2.88$).

Table 4. *Students' assessment of the teachers' level of competence in "become a better teacher every day"*

Indicators	Mean	Interpretation
1. My Teacher in Cookery asks students for feedback on how she can improve cooking lessons.	3.07	To a great extent
2. My Teacher in Cookery explores exciting and creative ways to make students' learning about cooking more interesting.	3.15	To a great extent
3. My Teacher in cooking analyzes student performance data to identify areas for improvement and tailors lessons accordingly.	3.08	To a great extent
4. My Teacher in Cookery speaks, interacts, and listens to other teachers respectfully and openly to help each other get better at teaching the same subject.	3.24	To a great extent
5. My Teacher in Cookery integrates new educational trends into her lessons.	2.95	To a large extent
6. My Teacher in Cookery actively seeks opportunities for professional growth, attending workshops and training sessions to stay updated on the latest teaching methodologies.	2.88	To a large extent
7. My Teacher in Cookery subjects herself to classroom observation by a supervisor like a master teacher or head teacher.	2.98	To a large extent
Overall Mean	3.05	To a great extent

The data implies that teachers exhibit high competency in becoming better every day, emphasizing speaking, interacting, and listening to other teachers with respect and openness to help each other get better at teaching the same subject. Teachers can work together to improve student outcomes and build a supportive professional community. Meador (2019) stated that regular team planning sessions and collaboration are highly beneficial to teachers, as they impact teacher effectiveness. Moreover, teachers can explore exciting and creative ways to make learning about cooking more enjoyable for students. Cox (2024) stated that there are several strategies to keep the class interesting, such as incorporating a sense of mystery in the lesson, using games in reviewing materials, utilizing interactive tools, relating lessons to real-life situations, and using flipped classrooms.

Among the four areas of teacher competency, Table 5 shows that Help the Students Learn has the highest overall mean of 3.18, followed by Know and Understand what my teacher teaches with an overall mean of 3.17, Become a Better Teacher Everyday with an overall mean of 3.05, and lastly, Engage the Community with an overall mean of 3.01. All of them are interpreted "to a great extent." This means that teachers demonstrate an exceptionally high competency in teaching cookery.

Table 5. *Summary of students' assessment of the teachers' level of competence*

Areas	Overall Mean	Interpretation
1. Know and Understand What My Teacher Teaches	3.17	To a great extent
2. Help the Students Learn	3.18	To a great extent
3. Engage the Community	3.01	To a great extent
4. Become a Better Teacher Everyday	3.05	To a great extent

This data implies that teachers are competent in helping their students learn. It requires various strategies and approaches to helping students learn. This aligns with Risnayati's (2020) emphasis on effective classroom management strategies, which enhance student learning outcomes by allowing students to feel comfortable during instruction, opening their minds to think creatively and broadly, igniting their enthusiasm for learning, and allowing them to spend more time seriously and actively engaged in the learning process.

3.2 Students' Description of their MELCs in Cookery

Table 6 delves into the students' assessment of their knowledge of cookery as an essential learning competency (MELC). The overall mean is 3.17, which is interpreted as highly competent. This means that the students demonstrate an exceptionally high level of competency in this area. Notably, the students described themselves as highly competent in terms of defining packaging, understanding its importance, recognizing its functions (M=3.23), and identifying the fundamentals of plating (M=3.07), still portraying themselves as highly competent.

The data implies that students are highly competent in knowledge, particularly in defining packaging, understanding its importance, and recognizing its functions. The students need to learn the importance of packaging because it helps them protect food, prevent food waste, ensure food quality, and comply with food regulations. Packaging is important for protection, safety, attractiveness, usability, and sustainability (Tiuttu, 2020). However, students may focus on understanding the fundamentals of plating. Effective plating makes the

food aesthetically appealing. Knowing plating may help students apply it during practical activities. It is essential to learn the fundamentals of plating before developing a unique plating technique (Unilever Food Solutions, n.d.).

Table 6. *Students' assessment of their knowledge in cookery Most Essential Learning Competencies (MELCs)*

Knowledge	Mean	Verbal Interpretation
1. I can identify the chemicals used in cleaning and sanitizing kitchen tools and equipment.	3.21	Highly Competent
2. I can classify appetizers based on their ingredients.	3.22	Highly Competent
3. I can identify the fundamentals of plating.	3.07	Highly Competent
4. I can identify different salad dressings, including their ingredients and accompaniments.	3.16	Highly Competent
5. I can identify the classification and components of sandwiches.	3.14	Highly Competent
6. I can identify the characteristics and ingredients of desserts.	3.16	Highly Competent
7. I can define packaging, understand its importance, and recognize its functions.	3.23	Highly Competent
Overall Mean	3.17	Highly Competent

Table 7 shows the students' assessment of their skills in cookery as a most essential learning competency (MELCs). As described by the students, teachers are highly competent in cleaning and sanitizing kitchen tools by prescribed standards (M=3.30). On the other hand, they can also label food according to industry standards (M=2.91), and though it received the lowest mean, they are still competent. Therefore, the students are highly competent in skills (M=3.16), demonstrating an exceptionally high competency in this area.

Table 7. *Students' assessment of their skills in cookery Most Essential Learning Competencies (MELCs)*

Knowledge	Mean	Verbal Interpretation
1. I can clean and sanitize kitchen tools by prescribed standards.	3.30	Highly Competent
2. I can prepare and present a variety of appetizers.	3.14	Highly Competent
3. I can prepare and present salads and dressings attractively.	3.11	Highly Competent
4. I can follow sanitary practices in preparing and presenting sandwiches attractively.	3.29	Highly Competent
5. I can prepare a variety of desserts and sauces by following sanitary practices.	3.24	Highly Competent
6. I can pack food items in compliance with Occupational Health and Safety Procedures.	3.11	Highly Competent
7. I can label food according to industry standards.	2.91	Competent
Overall Mean	3.16	Highly Competent

The data suggests that students are proficient in cleaning and sanitizing kitchen tools per prescribed standards. Cleaning and sanitizing kitchen tools are essential for good health (Samson, 2021). However, students may improve their skills in labeling food according to industry standards. They may use this essential skill during performance-based tasks. Food labeling is important because it provides important details about the product (Liivat, 2023).

Table 8 shows the students' attitude toward cookery as a most essential learning competency (MELCs). The students perceived they were highly competent in following workplace safety and first aid procedures (M=3.32). On the contrary, they can express the importance of desserts (M=3.17), though it got the lowest mean, but still considered as highly competent. Consequently, all items indicate highly competent, with an overall mean of 3.24. Thus, it means that the students demonstrate an exceptionally high level of competency in this area.

Table 8. *Students' assessment of their attitude in cookery Most Essential Learning Competencies (MELCs)*

Knowledge	Mean	Verbal Interpretation
1. I can follow a cleaning schedule based on enterprise procedures.	3.26	Highly Competent
2. I can follow workplace safety and first aid procedures.	3.32	Highly Competent
3. I can observe sanitary practices when presenting appetizers.	3.29	Highly Competent
4. I can maintain appetizers in appropriate conditions to preserve their freshness, quality, and taste.	3.23	Highly Competent
5. I can observe sanitary practices when presenting salads and dressings.	3.18	Highly Competent
6. I can express the importance of desserts.	3.17	Highly Competent
7. I can maintain desserts in appropriate conditions to preserve their quality and taste.	3.25	Highly Competent
Overall Mean	3.24	Highly Competent

The results suggest that students are competent in attitude, particularly in following workplace safety and first aid procedures. The BC Cook Articulation Committee (2015) stated that workers should observe safety precautions since the kitchen has many safety hazards that can cause accidents. However, students may enhance their attitude in expressing the importance of desserts. They may use this attitude while serving the dessert to their teacher as part of the assessment in practical tasks.

Among the three areas of students' MELCs in cookery, Table 9 shows that attitude has the highest overall mean of 3.24, followed by knowledge with an overall mean of 3.17 and skills with an overall mean of 3.16. All of them are interpreted as "highly competent." This indicates that students demonstrate an exceptionally high level of competency in cookery.

Table 9. Summary of students' MELCs in cookery

Areas	Overall Mean	Verbal Interpretation
1. Knowledge	3.17	Highly Competent
2. Skills	3.16	Highly Competent
3. Attitude	3.24	Highly Competent

This data implies that students are competent, particularly in attitude. Having a positive attitude enhances learning, efficiency, and health and safety practices. Ismail, Harun, Razzaq, Mahazir, Samad, and Othman (2018) found that good safety practices influence students' knowledge, perceptions, and attitudes in laboratories.

3.3 Relationship Between Teachers' Level of Competence and the Students' Perceived MELCs in Cookery

Table 10 presents Spearman's rank correlation test results of the relationship between TLE teachers' competence and students' MELCs in cookery regarding knowledge. As gleaned from the table, engaging the community has the highest correlation coefficient of 0.460. Conversely, helping the students learn received the lowest correlation coefficient of 0.402. All areas were interpreted as 'moderate'. Furthermore, all areas have garnered a p-value of 0.000, lower than the predetermined 0.05 significance level. Hence, the null hypothesis was rejected, indicating a significant relationship between teachers' competence when correlated with the students' MELCs in cookery in terms of knowledge.

Table 10. Spearman's rank correlation: Relationship between TLE teachers' competence and knowledge in cookery Most Essential Learning Competencies

Teachers' Competence	Knowledge				
	Correlation Coefficient	Interpretation	p-value	Decision	Remark
Know and Understand What My Teacher Teaches	.421**	Moderate	0.000	Reject Ho	Significant
Help the Students Learn	.402**	Moderate	0.000	Reject Ho	Significant
Engage the Community	.460**	Moderate	0.000	Reject Ho	Significant
Become a Better Teacher Everyday	.411**	Moderate	0.000	Reject Ho	Significant

This implies that teachers' competence greatly influences students' ability to gain knowledge during class discussions. Lassen and Hjalmskog (2021) found that teachers use a wide range of teaching strategies, such as organizing and conceptualizing steps, routinizing theoretical and practical tasks, and reflecting on their outputs to help students learn.

As shown above, Table 11 presents the results from Spearman's rank correlation test of the relationship between TLE teachers' competence and students' MELCs in cookery in terms of skills. As can be seen from the table, it resulted in a correlation coefficient of 0.426 in helping the students learn while 0.350 in knowing and understanding what my teacher teaches. Three out of four areas were described as "weak," while the remaining area was described as "moderate." The null hypothesis was rejected, indicating a significant relationship between teachers' competence and the students' MELCs in cookery regarding skills.

Table 11. Spearman's rank correlation: Relationship between TLE teachers' competence and skills in cookery Most Essential Learning Competencies

Teachers' Competence	Skills				
	Correlation Coefficient	Interpretation	p-value	Decision	Remark
Know and Understand What My Teacher Teaches	.350**	Weak	0.000	Reject Ho	Significant
Help the Students Learn	.426**	Moderate	0.000	Reject Ho	Significant
Engage the Community	.386**	Weak	0.000	Reject Ho	Significant
Become a Better Teacher Everyday	.385**	Weak	0.000	Reject Ho	Significant

The statistical results only prove that teachers' competence increases students' skills. It implies that teachers ensure that they demonstrate high. Segundo (2022) articulated that when teachers provide performance tasks, students' motivation to learn significantly increases. Students were also observed to be proficient in handling cooking materials and equipment.

Table 12 shows Spearman's rank correlation test results of the relationship between TLE teachers' competence and students' MELCs in cookery in terms of attitude. As can be gleaned from the table, helping the students learn has the highest correlation coefficient of 0.500. On the other hand, a better teacher got the lowest correlation coefficient of 0.448 every day. All areas were described as "moderate".

Table 12. *Spearman's rank correlation: Relationship between TLE teachers' competence and attitude in cookery Most Essential Learning Competencies*

Teachers' Competence	Attitude				Remark
	Correlation Coefficient	Interpretation	p-value	Decision	
Know and Understand What My Teacher Teaches	.459**	Moderate	0.000	Reject Ho	Significant
Help the Students Learn	.500**	Moderate	0.000	Reject Ho	Significant
Engage the Community	.450**	Moderate	0.000	Reject Ho	Significant
Become a Better Teacher Everyday	.448**	Moderate	0.000	Reject Ho	Significant

The null hypothesis was rejected, indicating a significant relationship between teachers' competence and the students' MELCs in cookery regarding attitude. In other words, the teachers' competence has benefited the students in developing their attitude in cookery. This result aligns with Villegas (2021), who found that TLE teacher competence in instructional, classroom management, guidance, and personal and professional skills have a significant relationship between the students' work skills and work attitudes.

4.0 Conclusion

In line with the following findings gathered in this study, the researcher drew the following conclusions:

- The level of competency of TLE teachers is shown to a great extent. It is manifested in the following areas: knowing and understanding what my teacher teaches, helping the students learn, engaging the community, and becoming a better teacher every day. This means that teachers demonstrate an exceptionally high level of competency in teaching cookery.
- The students' MELCs in cookery are highly competent and manifested in the following areas: knowledge, skills, and attitude. This means that students demonstrate an exceptionally high level of competency in cookery.
- There is a significant relationship between TLE teachers' competence and students' MELCs regarding knowledge, skills, and attitude in cookery. Hence, the null hypothesis is rejected.

5.0 Contributions of Authors

There is only one author for this research.

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School Heads' Level of Performance in School Improvement Planning Journey: Basis for Enhanced Leadership and Management Program

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Abstract. The school improvement plan encompasses the development of activities to help schools reach the goal of providing access to quality education. Embarking on this initiative, this study aimed to determine the level of performance of select school heads in Dinagat Islands in their journey to developing and crafting school improvement plans. The mixed-methods research design was utilized with frequency, percentage, and weighted mean. The study revealed that most school heads are at the elementary level, aged 31 to 40, and have 6 to 10 years as school heads deployed primarily in small schools, under Head Teacher positions, and with very satisfactory performance. Results revealed that school heads are classified under the Basic Level as having fair performance, with a partial understanding of the guidelines for crafting a school improvement plan. They are also categorized as Emerging school heads who fully implemented school interventions to address key result areas, thereby having a very high level of implementation in their school improvement plan. There are drawbacks and gains in crafting the enhanced school improvement plan based on supporting documents presented, adherence to policies, assessing priority improvement areas, developing projects, and alignment to key result areas. It is further recommended that with additional profile, the school heads may be upskilled with strategic planning by revisiting guidelines stipulated under DepEd Order 44 s, 2015, along with Philippine Professional Standards for School Heads indicated in DepEd Order No. 24 s, 2020, and aligned with access, quality, governance, equity, well-being and resiliency.

Keywords: Leadership; Management; School head; School improvement plan.

1.0 Introduction

Education is an indispensable keystone for development. The success of educational institutions lies in the role of school leaders (Kilag et al., 2023). As the blueprint of a school, the School Improvement Plan starts with initiated detailed programs, activities, and projects as interventions to address issues and concerns along with access, quality, resiliency and well-being, equity, and governance. Such are implemented within three consecutive school years (DepEd Order No. 44 s. 2015). Through this, community stakeholders are actively involved in educational processes and goals. Such undertakings include shared governance and feedback mechanisms to ensure accountability and continuous improvement. It seeks to enhance the three primary essential education outcome areas: access, quality, and governance (Guzman, 2022). In addition, as stated in the DepEd Order No. 29 s. 2022 the school improvement plan will be recalibrated according to the intermediate outcomes and enabling mechanism.

As a mechanism, the School Improvement Plan directs school leaders in identifying, determining, and addressing issues and concerns (Marianno et al., 2023). It has collectively supporting factors in the organization that enhance students' possibilities for learning about a complex world. Moreover, as stated in the Governance of Basic Education Act of 2001(RA 9155), every school head has the authority, accountability, and responsibility to develop the school education program and improvement plan. It envisions creating an environment of collaboration that is communicated and disseminated to stakeholders through a school report card (DepEd Order No. 44, 2015).

School heads are catalysts of change. The quest for quality education depends on the kind of leadership school heads demonstrate (Dellomas & Deri, 2022). Manzano and Illescas (2023) confirmed that school leaders are a significant vehicle for educational change and development in creating a productive, disciplined learning environment. In a school improvement plan, shared governance and feedback mechanisms are evident in coming up with sound decisions aligned with the vision and mission of education, including education goals (Casinillo & Suarez, 2021). Stevenson (2019) assured that an improvement plan is not enough without a strategy. The process of thinking through the proposed actions and how they were supposed to connect to intended results must be evident in school improvement planning. School heads must plan with strategy, including its process and implementation. Carvalho et al. (2022) added the importance of having strong management teams involved to ensure the process of producing efficient interventions for the school's welfare. Moreover, Decir and Paglinawan (2024) confirmed that school heads who effectively apply practices and engage in strategic planning would provide essential and meaningful change in their schools. This will lead to the successful facilitation of the school improvement plan with stakeholders' utmost support and development in pursuit of educational excellence (Balindong et al. 2024).

Finally, this research aims to determine the school leaders' potential in developing the school improvement plan and their challenges, which may require future training that will equip them with management empowerment and leadership skills for better implementation. This includes the profile of the school handled and the personal profile of the school leaders, the level of understanding of the essential concepts relevant to guidelines for the enhanced school improvement plan, and the level of implementation of the school interventions.

2.0 Methodology

2.1 Research Design

The study utilized a mixed-methods investigation (Creswell, 2018). The qualitative analysis used analysis of school interventions and initiatives to address problems as part of the school improvement planning process. The qualitative study revealed the potential and level of performance in conceptualizing projects. The quantitative research revealed the performance level in the strategic planning process involving the ASSESS-PLAN-ACT stated in Department Order No. 44 s. 2015.

2.2 Research Locale

With the approval of the School Division Superintendent, Department of Education, Division of Dinagat Islands, the study was conducted among Elementary and Secondary school heads in the province of Dinagat Islands with ten (10) districts. This location was chosen because it caters to the potential of school heads in their quest for school improvement planning. This also included challenges and opportunities in their educational leadership and management.

2.3 Research Participants

The respondents were school heads in both elementary and secondary schools who had undergone the process of developing and implementing the 3-year road map of a School Improvement Plan. There were 17 in the elementary level, 8 of whom were males and 9 females. Likewise, 15 were in the secondary level, 8 of whom were males and 7 of whom were females. Both levels came from the division's 10 districts.

2.4. Research Instrument

The researcher constructed a questionnaire with the assistance of the adviser. It included four parts. Part I consisted of the profile of school heads along with sex, age, length of service, office performance commitment

review form rating, position, and school level. Part II covered a 20-item multiple choice type anchored from Department Order No. 44 s. 2015, the Guidelines on the Enhanced School Improvement Plan. Part III includes survey questions with a Likert scale. Part IV had structured questions focused on the experiences, challenges, issues, and concerns relevant to crafting the school improvement plan upon the completion of the contents of the questionnaire validation. With the final questionnaire ready for administration, a dry run was conducted with the 10 school heads randomly chosen in the division via Google Forms. Facilitated and followed up with chosen school heads in the dry run to ensure the completion and validation. After harvesting the answers through spreadsheets, it was subjected to the Cronbach alpha reliability test. The instrument for the school heads gave a value of 0.7, which is interpreted as good, acceptable, and reliable. Finally, the questionnaires were revisited and prepared for administration to the target respondents.

2.5 Data Gathering Procedure

The following course of action was the leading guide of the proponent. First, permission to conduct the study was sought from the Division Superintendent on the recommendation of the Research focal Persons. Second, the researcher introduced herself and explained the study's rationale to school head-respondents. Third, school heads were instructed to answer the questionnaire via Google Forms. The answers were gathered through spreadsheets. Strong internet connectivity was necessary to accomplish the three parts of the questionnaires. Fourth, the researcher facilitated the respondents to answer and complete the questionnaires. Constant communication was done via social media. Fifth, the gathered data was obtained from the spreadsheets. Sixth, the data was analyzed using frequency, percentage, and mean percentage scores. The qualitative analyses were made through open and axial coding systems. Open coding, the first level, looks into distinct concepts and categories in the data (basic unit of analysis) and breaks down data into first-level and second-level categories. Axial coding uses concepts and categories to confirm concepts and categories accurately represent the gathered responses and to explain how concepts and categories are related (Creswell, 2007). Related studies supported interpretations of the results. Lastly, the researcher assured the respondents that all of their responses would be kept strictly confidential and that the findings of the study would only be used for educational purposes.

2.6 Ethical Considerations

This research study followed ethical guidelines. The respondents' participation was voluntary. They were to dismiss themselves from the study whenever they felt uncomfortable. Their participation was protected from harm: physical, social, psychological, and all other forms of harm were kept to an absolute minimum. The dignity and well-being of elementary teachers who responded were always protected. The research data remained confidential throughout the study, and the respondents' rights were protected, ensuring scientific or academic integrity. Furthermore, proper communication of results must be practiced to ensure that this research study is free of plagiarism or research misconduct.

3.0 Results and Discussion

Table 1 indicates the profile of the school according to the school level. There are only 15 (46.88) secondary school heads, while 17 (53.12) elementary school heads actively participated and patiently answered the questionnaire. This implies that there are more school heads in the elementary than in the secondary who responded to the given questionnaire.

Table 1. *Profile of the schools - based on the grade level*

School Level	Frequency	Percentage
Secondary	15	46.8
Elementary	17	53.1
Total	32	100

Table 2 indicates the school profile according to the school size or the population of learners. From the 15 secondary schools, more than half (53.34%) of the school respondents are categorized as small schools having nine (9) and below number of teachers. Likewise, the very least respondents are only two (2) large schools having more than 30 teachers. This implies that many small schools are distributed to various places to access basic education in the province.

Table 2. *Profile of the schools according to their size*

School Size	Secondary (Frequency)	Percentage	Elementary (Frequency)	Percentage
Small	8	53.3	10	58.3
Medium	5	33.3	5	49.4
Large	2	13.3	2	11.7

Table 3 indicates the profile of the respondent school heads according to sex. There are sixteen (16) male school heads and sixteen (16) female school heads in elementary and secondary schools. This implies that the gender perceptions of both males and females are given equal perspectives based on their individual experiences as school heads in their respective assignments.

Table 3. *Profile of the schools according to their sex*

Sex	Frequency	Percentage
Male	16	50.0
Female	16	50.0

Table 4 indicates the profile of school heads according to age ranges. There are 12 (37.50%) school heads whose ages ranged from 30 to 40 years old, while 10 (31.25%) school heads in the same age range from 41-50 and 51 and above, respectively. This implies that there are more school heads in their early workforce stage. The findings were in contrast with the study conducted by Dellomas and Deri (2022), which found that the wisdom of older school heads is more powerful and persuasive than that of young ones due to their belief in maturity and emotional stability.

Table 4. *Profile of School Heads based on age range*

Age	Frequency	Percentage
31 -40	12	37.5
41-50	10	31.2
51 and above	10	31.2

Table 5 indicates the positions of the school heads. Among the respondents, there are 5 (15.63%) Schools in charge (SIC), 21 (65.65%) are Head Teachers (I-IV), and only 6 (18.85%) are full-pledged school heads occupying the item as Principal I-IV. This implies that more than halved (65.63%) are head teachers and still candidates and aspirants for the qualifying examination for school heads.

Table 5. *Profile of school heads based on position*

Position	Frequency	Percentage
School in -charge	5	15.6
HT-I - HT-IV	21	65.6
PI-PIV	6	18.8

Table 6 presents the profile of school heads based on length of service as school heads. There are 10 (31.25%) who are managing as school head in 1-5 years, only 11 (34.38%) are handling school for 6 to 10 years, and only 11 of them are also leading a school for more than 11 years. This implies that the respondents were mostly or nearly equal in the length of service. Egloso and Benavides (2024) assured the findings that school heads with longer tenures have the chance to develop profound institutional backgrounds, establish strong harmonious relationships within the school community, and implement long-term strategic initiatives that contribute to sustaining improvement and innovation.

Table 6. *Profile of school heads based on length of service*

Length of Service	Frequency	Percentage
1-5 years	10	31.25
6-10 years	11	34.38

Table 7 reflects the profile of school heads regarding their Office Commitment and Review Form (OPCRF) Rating according to school level. The secondary school heads had a mean rating of 4.27, higher than elementary school heads with a 4.20 mean rating; both were qualitatively described as Very Satisfactory. This implies that all school head – respondents are on the same performance level. Such findings are supported by Casinillo and Suarez (2021) that school leaders had a very satisfactory rating as reflected in their initiative to improve their leadership traits and style to increase instructional effectiveness as well as the performance of their schools.

Table 7. *Profile of school heads based on OPCR rating*

Level	Mean	Qualitative Description
Secondary	4.27	Very Satisfactory
Elementary	4.20	Very Satisfactory

Table 8 displays the mean score of the school heads according to grade level in the 20-item test focused on the guidelines for crafting a school improvement plan. The secondary school heads had a mean score of 11.80 (59.00), while elementary school heads had a mean score of 10.41 (52.06). Both are classified as Basic, indicating that the school heads in both levels have Fair Performance, with a partial understanding of crafting school improvement plans based on DepEd Order 44 s, 2015. Such findings are affirmed by Galeposo (2020), who states that school heads should acquire a comprehensive theoretical understanding of the concepts of the school heads' competencies and their practical applications for them to develop, improve, and enhance their ability in school management. In addition, dynamic professional development and more developed critical and analytical skills are needed to pass the examination for full – pledged principal. Moreover, Dellomas and Deri (2022) assured that a leadership enhancement program would improve and sustain the leadership practices of school heads.

Table 8. *Level of understanding of the essential concepts relevant to guidelines to enhanced school improvement plan*

Level	Mean	Mean Percent Scores	Level	Qualitative Description
Secondary	11.8	59.0	Basic	Fair Performance: Have a partial understanding of crafting a school Improvement Plan.
Elementary	10.4	52.0	Basic	Fair Performance: Have a partial understanding of crafting a school improvement plan.

Table 9 considers the level of implementation of the DepEd Order 44 s, 2015 in their journey of crafting the School Improvement Plan. The secondary school heads had a mean rating of 63.28 (10.59), while Elementary school heads had 68.41 (10.80). It can be gleaned that both levels had a Very high level of implementation. This implies that they were emerging school heads who fully Implemented school interventions to address key result areas to their utmost capabilities as school heads. The findings are confirmed by Dacpano (2022) in his study that the high practice of transformational leadership of school heads yielded a way for school improvement and performance marked by the sustained process of stakeholders' participation and significant student learning outcomes. Successful facilitation of the school improvement plan was an offshoot of utmost support and development from stakeholders (Balindong et al., 2024).

Table 9. *Level of implementation of the school interventions implemented to address the intermediate outcomes and enabling mechanism*

School Level	Mean	SD	Level	Qualitative Description
Secondary	63.2	10.5	Very high	Emerging school heads who fully Implemented school interventions to address key result areas
Elementary	68.4	10.8	Very high	Emerging school heads who fully Implemented school interventions to address key result areas

Table 10 presents the experiences of school heads based on the associated theme. The consolidated answers of the school heads were summed up in the table for elementary and secondary school students according to the gathering of supporting documents, adherence to policies, assessing priority improvement areas, developing projects, and alignment to key result areas. Such findings are supported by Manzano and Illesca (2023), who state that school heads encountered various challenges in leadership and governance, curriculum and learning, accountability and continuous learning, and management of resources. These challenges were necessary factors to be addressed for effective school management and improvement. Moreover, Decir and Paglinawan (2024) confirmed that effective practices and engagement in strategic planning provided meaningful change in the schools.

Table 10. *Experiences of school heads in crafting school improvement plan*

Associated themes	Secondary	Elementary
Gathering of supporting data-driven documents for crafting the School Improvement Plan	- Some data lacked details, and completing them entails more time to gather - School planning team was organized for the collection of data	- The collected of data was done with a limited time - Some members of the school planning team were pre-occupied with other responsibilities
Adherence to policies of the DepEd Order 44 s. 2015	- The timeline was not correctly set and organized accordingly - There was a limited walkthrough of the guidelines	- The phases included in the guidelines were followed with some sort of inconsistencies - The previous experience became the basis for crafting
Assessing priority Improvement areas (PIA)	- The criteria for PIAs are all set for very high priority and very few and low priority - There was unequal weight given to areas set as a priority	- Specific areas have the same scale since they were needed in the various projects - Seemingly all PIAs were given high weight
Developing suitable projects	- There were a lot of projects initiated that were focused on one key result area - More projects were focused on access only	- The names of the projects were too specific to the expected output under governance - The names of the projects were not adequately conceptualized and aligned with the key result areas
Aligning of projects to key result areas	The projects were not equally distributed to meet the demands in every key result area	The developed projects were primarily done by school heads and later presented to stakeholders

4.0 Conclusion

This study concluded that the majority of the school heads are at the elementary level, aged 31 to 40 years old, have 6 to 10 years as school heads in small schools, under Head Teacher plantilla positions, and with very satisfactory performance. They are classified under the Basic Level as having fair performance, with a partial understanding of the guidelines for crafting a school improvement plan. They are both Emerging school heads who fully Implemented school interventions to address key result areas, thereby having a very high level of implementation in their school improvement plan. There are drawbacks and gains in crafting the enhanced school improvement plan based on supporting documents presented, adherence to policies, assessing priority improvement areas, developing projects, and alignment to key result areas. It is further recommended that with additional profile, the school heads may be upskilled with strategic planning by revisiting guidelines stipulated under DepEd Order 44 s, 2015, along with Philippine Professional Standards for School Heads indicated in DepEd Order No. 24 s, 2020, and aligned with access, quality, governance, equity, well- being and resiliency.

5.0 Contributions of Authors

The author did the conception, design, analysis, writing, or revision of the manuscript.

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The author declares no conflict of interest about the publication of this paper.

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The Role of Non-Governmental Organizations in Advancing Peace Education in Selected Barangays in Zamboanga del Sur: A Case Study

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Abstract. This case study explores the role of non-governmental organizations (NGOs) in advancing peace education in selected barangays of Zamboanga del Sur, Philippines. The study aims to provide insights into the specific challenges and strategies of NGOs promoting peace education at the local level. Data were collected using semi-structured interviews with representatives from two NGOs actively engaged in peace education initiatives across multiple barangays. Thematic analysis revealed that although these organizations are dedicated to fostering peace, maintaining Indigenous culture, and engaging in community service, they face several obstacles: (1) Indigenous children's lack of interest and awareness, as well as Indigenous leaders' lack of peace education knowledge and skills; (2) schedule conflicts and limited funding (3) noncompliance with requirements, and (4) lack of support from partner organizations. To cope with these challenges, the selected NGOs involve Indigenous leaders in program planning and implementation, encourage community involvement and support, and customize programs to the specific needs and customs of the community. This highlights the significance of adaptability and inclusivity in promoting peace education and fostering sustainable change within the community they serve. The findings underscore the importance of adaptability and inclusivity in promoting peace education and achieving sustainable change within the communities served.

Keywords: Non-governmental organization; Peace education initiatives; Zamboanga del Sur; Social capital theory; Conflict transformation theory.

1.0 Introduction

Peace education encompasses various dimensions, such as human rights, global citizenship, intercultural understanding, conflict resolution, and nonviolent communication (Gur-Ze'ev, 2001). It is based on the belief that education can contribute to the prevention of violence, resolution of conflicts, and promotion of social justice (Brantmeier et al., 2010). Its mission is to provide individuals with the knowledge and skills they need to develop and preserve peace in their communities (Salomon & Cairns, 2011). However, traditional formal education institutions frequently need help to appropriately handle these complex concerns, necessitating alternate methods of peace education.

Non-governmental organizations (NGOs) have emerged as critical participants in spreading peace education by filling gaps in formal education systems and working directly with communities (Leicht et al., 2018). These groups

work independently or in partnership with governments and educational institutions, and their contributions to peace education are varied and significant (Kennedy & Dornan, 2009). Non-governmental organizations (NGOs) provide vital resources, experience, and grassroots networks that improve the effectiveness and durability of peace education efforts (Lewis & Kanji, 2009).

In the context of Zamboanga del Sur, Philippines, an urban area characterized by intercultural and interreligious conflicts, the involvement of NGOs in furthering peace education is significant. There is a notable presence of intercultural and interfaith conflicts within the urban areas in the said region. These conflicts are frequently caused by differences in cultural practices, beliefs, and social standards among the region's many communities. NGOs are critical in promoting peace education in a complex and diverse environment. Ergo, this study's focal points provide insights into the specific challenges and opportunities experienced by NGOs in promoting peace education within a complex social fabric.

The effectiveness of peace education programs must be evaluated to understand their impact and suggest areas for development (Del Felice et al., 2015). Research studies have shown that peace education programs can help individuals and communities improve their attitudes, behaviors, and relationships. Heydenberk and Heydenberk (2000) discovered that school peace education interventions resulted in lower levels of aggressiveness, more empathy, and enhanced student conflict resolution abilities. Similarly, UNESCO (2009) contended that peace education workshops improve intergroup connections and reduce preconceptions and prejudices.

Despite the numerous studies of peacebuilding and security processes across the globe, there is a dearth of research focused on the specific roles NGOs carry out in these processes (Christie, 2012). Understanding the roles and performance of NGOs in diverse settings has been a subject of scholarly interest for decades. These roles refer to NGOs' specific functions, responsibilities, and strategies to develop, implement, and sustain peace education initiatives (e.g., curriculum design, community mobilization, advocacy, and resource allocation).

For instance, an early contribution to the field by Kalyadin (1987) examined NGOs' involvement in conflict resolution and peace processes through a combination of policy analysis and comparative studies. The study underscored that measuring performance must account for policy influence and stakeholder perceptions, which was done by mapping the political and historical contexts in which NGOs operated. This approach recognizes the role of NGOs as service providers that frequently shape or inform policy discussions, making a purely quantitative assessment of their work insufficient.

Subsequent scholarship has delved deeper into NGOs' peace-related intervention. The study highlighted the challenges of evaluating ongoing conflicts. Austin et al. (2003) illustrate how participant-centered feedback and conflict-sensitive frameworks are crucial for assessing NGO-led programs. Due to the protracted nature of conflicts in Israel/Palestine, efforts to foster coexistence often hinge on whether NGOs can adapt their program goals to rapidly changing on-the-ground realities.

In contexts like Nigeria, where NGOs strive to address communal tensions and promote peace, evaluators frequently adopt needs-based assessment and community engagement metrics to gauge program effectiveness. Dele and Odoma (2024) point out the importance of measuring both local stakeholders' trust in NGOs and the extent of their grassroots involvement.

These studies illustrate that NGO evaluations require frameworks sensitive to local culture, conflict dynamics, and community participation. They also prove that NGO effectiveness cannot be fully captured by simple metrics alone. Instead, researchers must account for how NGOs shape and are shaped by sociopolitical environments, particularly in peace education contexts where success may be measured less by immediate program outcomes and more by the long-term transformation of community relationships and attitudes.

Hence, this study aims to investigate the role of NGOs in advancing peace education in selected barangays in Zamboanga del Sur, Philippines. It aims to contribute to the existing body of knowledge on peace education and provide insights into potential strategies for enhancing peace education practices at the local level.

The case study's aims are threefold. First, it intends to explore how NGOs fulfill their roles in designing and implementing peace education programs in selected barangays in Zamboanga del Sur. This investigation will shed light on the unique programs, actions, and techniques used to promote peace education at the local level. Second, the study seeks to identify the obstacles that NGOs encounter in furthering peace education in the local environment. Understanding these problems is critical for generating successful solutions and interventions.

Finally, the study seeks to identify strategies for improving peace education practices in Zamboanga del Sur. The study intends to provide practical recommendations for strengthening peace education efforts in the local context by investigating successful approaches, new methodologies, and lessons learned through NGO-led initiatives. These proposals might be a significant resource for NGOs, governments, educators, and other stakeholders promoting peace education in Zamboanga del Sur and other comparable situations.

2.0 Methodology

2.1 Research Design

A case study design was chosen to delve thoroughly into the role of non-governmental organizations (NGOs) in promoting peace education in Zamboanga del Sur. Case studies are instrumental when researching current phenomena in real-life situations, especially when the boundaries between the phenomenon and the context are unclear (White & Cooper, 2022). This study examines the selected NGOs, emphasizing understanding their impact, activities, and strategies in advancing peace education.

2.2 Research Locale

The study was conducted in selected barangays in Zamboanga del Sur, wherein NGOs actively operate peace education initiatives. Several key factors influenced the choice of this locale. First is the region's rich cultural diversity. It encompasses different ethnic, religious, and linguistic groups. This often leads to intercultural and interreligious tensions, which makes it an ideal setting to explore how peace education can address misunderstandings. Second, these barangays have experienced periodic community disputes rooted in competing for cultural practices and socioeconomic inequalities, which prompt NGOs to collaborate with local leaders in devising programs to reduce conflict. Third, NGOs' visibility and track record in implementing grassroots educational initiatives further validated this locale as an informative case for studying peace education strategies.

Against this backdrop, Zamboanga del Sur's ongoing efforts to promote social cohesion (e.g., government-led and NGO-led projects) offer a diverse and dynamic environment for understanding how peace education is conceptualized, delivered, and evaluated. This research would gain rich insights into the challenges and successes of NGOs working in areas prone to tensions, which would ultimately strengthen the overall inquiry into effective peace education practices.

2.3 Research Participants

Selection of NGOs (Cases)

NGO participants were selected based on specific criteria to ensure the relevance to the research objectives:

- a) Only NGOs based in Zamboanga del Sur were considered for this study. This criterion guarantees that the focus remains on organizations familiar with the local context.
- b) NGOs focused on peace education projects or initiatives were included. This criterion ensures that the participating NGOs have the necessary expertise and competence in furthering peace education.
- c) NGOs that demonstrated interest and interview availability were included to facilitate timely data collection.
- d) Earnest efforts were made to include NGOs with diverse organizational characteristics, such as varying sizes, target demographics, and peace education approaches.

Two NGOs were chosen based on these criteria. They are noted for their robust engagement in peace education and significant regional presence. *NGO A* is a mid-sized institution for over a decade in Zamboanga del Sur. It represents several Indigenous communities and prioritizes cultural preservation, Indigenous well-being, and education. *NGO A* also actively engages in regional peacebuilding projects to foster unity among diverse tribal groups. Meanwhile, *NGO B* is more minor but grassroots-oriented. It is noted for its commitment to peace, solidarity, and public service. *NGO B* implements community outreach programs (i.e., providing livelihood

opportunities and humanitarian aid) across various cultural and tribal settings to promote social harmony and inclusive community development.

It is established by local community leaders to address cultural and interfaith tensions. It is primarily based in urban barangays but occasionally expands to adjacent communities.

Selection of Participants for Interviews

Multiple stakeholders from each organization were invited to participate to gather holistic insights into each NGO's peace education efforts. The following inclusion criteria were used when inviting individuals from each organization to participate in the interviews:

- a) Participants had to be employed or actively involved with the NGO for at least six months to become familiar with the organization's programs and operations.
- b) They should be involved in some aspect of the NGOs' peace education initiatives (e.g., planning, implementation, outreach, or collaboration with community members).
- c) They should be available during the data collection period and provide informed consent for the interview process.
- d) All participants must be 18 years or older at the time of the interviews to comply with ethical considerations.

2.4 Research Instrument

Primary data were gathered through structured interviews, which were conducted using electronic means such as email, Messenger, and video conferencing. Such methods were selected to overcome geographical and logistical constraints while facilitating insights into the NGOs' methodologies, challenges, achievements, and overall impact. A structured interview guide was developed to maintain a consistent line of questioning across participants. This guide was organized into four thematic areas: background and organizational context; roles and approaches in peace education; challenges and obstacles; and impact assessment and future directions.

2.5 Data Gathering Procedure and Analysis

This study adopted a case study research design (Yin, 2009) to explore how NGOs implement and sustain peace education in Zamboanga del Sur. In line with Yin's emphasis on in-depth inquiry, semi-structured interviews were conducted with representatives from each selected NGO, allowing for a comprehensive exploration of organizational context, strategies, and challenges.

Each interview session was guided by a set of open-ended questions designed to draw out detailed information about the NGO peace education initiatives. This approach enabled the participants to elaborate on their experiences and also made sure the discussion remained relevant to the study's focus. Interviews were recorded with the participant's consent and later transcribed verbatim to make sure that accuracy and completeness of information were obtained.

Following the collection of interview transcripts and supporting documents, the data underwent thematic analysis based on the procedures outlined by Braun and Clarke (2006):

- a) Familiarization with the data. Interview transcripts were reviewed multiple times to gain an overall sense of the content. Initial notes were taken, especially on recurring ideas related to peace education challenges, strategies, and perceived outcomes.
- b) Generating Initial Codes: The data was then systematically coded. Emphasis was given to segments of the text that illustrated key insights about NGO roles, resource utilization, and contextual barriers within the barangays.
- c) Searching for Themes: Codes were organized into broader themes that captured significant patterns across the data.
- d) Reviewing Themes: The themes were refined by checking them against the complete data set so that each theme accurately reflected underlying concepts and was mutually distinct from each other.
- e) Defining and Naming Themes. Each theme was clearly defined, labeled, and contextualized to highlight its relevance to peace education efforts.
- f) Producing the Report: Lastly, thematic interpretations were compiled into coherent narratives, linking them to the study's aims and the theoretical framework guiding the case study.

2.6 Ethical Considerations

All participants provided informed consent. They were fully briefed on the study's purposes and their voluntary involvement. Anonymity and confidentiality were guaranteed through pseudonyms in all internal documentation and publications.

3.0 Results and Discussion

3.1 Peace Education Programs and Initiatives Implemented

This section looks at unique peace education programs and efforts done by non-governmental organizations in Zamboanga del Sur barangays. NGOs attempt to empower individuals with the essential information, skills, and values to become active contributors to peacebuilding by executing various initiatives (Friis, 2010). Workshops, trainings, dialogue sessions, community outreach programs, and joint projects are among the activities covered by the initiatives.

Preservation of Indigenous Culture and Tradition

The following quote encapsulates the essential values and objectives of NGO A in Zamboanga Del Sur, Philippines. This organization represents several Indigenous populations in the region. Its purpose is to conserve and promote Indigenous culture, customs, and traditions while prioritizing Indigenous people's well-being and education. Furthermore, the organization is actively engaged in peacebuilding initiatives to promote harmony and unity among various tribal groups.

"We prioritize Indigenous people in terms of education, custom, and tradition to cultivate them in future generations. We also preserve our traditions from our ancestors and ancestral domains since Indigenous people's principle is to protect and care for our Mother Earth."

This demonstrates the organization's strong dedication to Indigenous peoples and preserving their culture and customs. The organization, according to the quote, attempts to "prioritize Indigenous people in terms of education, custom, and tradition" and recognizes their position as environmental guardians and caretakers. This commitment aligns with the findings of Maphosa and Keasley's (2019) study. Said study emphasized the importance of Indigenous knowledge and practices in promoting environmental sustainability and preserving cultural diversity. Prioritizing Indigenous culture and traditions shows that the group contributes to preserving cultural heritage and fosters a sense of identity and belonging within the community.

"Our peace education aims to nurture a culture of understanding, respect, and peace. We aim to bridge cultural gaps and empower Indigenous people to reclaim their identities."

In addition to their commitment to cultural preservation, NGO A actively participates in regional peacebuilding projects. Recognizing the value of peace, harmony, and understanding among varied populations, the organization is critical in encouraging discussion, collaboration, and reconciliation. They hope to address problems, bridge gaps, and promote long-term peace through various peace initiatives. NGO A contributes to forming a peaceful and inclusive community by developing mutual respect and understanding for all cultures and traditions. Their activities assist the local Indigenous populations and the broader social fabric of Zamboanga Del Sur.

Community Engagement and Service

The quote is from NGO B, an organization dedicated to peace, solidarity, and public service. NGO B is known for its extensive community outreach programs in Zamboanga del Sur, which aim to improve individuals' well-being and foster social harmony.

"We extend services to the community such as livelihood, giving of relief goods to the community affected by calamities regardless of their cultures and tribes, clean up drives in schools, feeding program for the marginalized children, giving personal hygiene to the prisoners, etc."

The organization's community engagement and service initiatives are committed to social responsibility and collective well-being. The data mentions numerous activities such as providing community services, giving livelihood opportunities, and delivering humanitarian supplies during disasters. These projects overlook cultures and tribes, highlighting the organization's inclusive attitude to community development. When community development programs discriminate against cultures and tribes, it can result in marginalization, exclusion, and tensions between different groups (Hettne, 1993). On the other hand, the organization can foster a sense of belonging and inclusion among community members by recognizing and valuing the diversity and originality of different cultures. This inclusive approach encourages understanding, empathy, and respect, all necessary to develop peaceful and harmonious societies (Huda et al., 2020). Furthermore, community engagement initiatives such as school clean-up drives, food programs for vulnerable children, and personal hygiene assistance to convicts address underlying socioeconomic concerns and inequality. Because of these, the organization helps to reduce socioeconomic inequities and build a fairer society. As a result, people feel respected, supported, and empowered, creating an environment conducive to peace (Matyók et al., 2011).

A Multi-Case Comparison

NGO A focuses on the preservation of Indigenous culture and traditions as its core peace education strategy. The organization aims to empower marginalized populations to reclaim their cultural identity and take pride in their role as stewards of their ancestral lands. Its peacebuilding projects seek to address lingering communal issues stemming from cultural disparities, which emphasize inclusive participation and intercultural harmony. In contrast, NGO B adopts a service-oriented approach to peace education through comprehensive outreach initiatives. These include distributing relief goods during calamities, offering livelihood support, and organizing school clean-up drives that bring community members together across diverse cultural or tribal backgrounds. Viewed side by side, NGO A's and NGO B's methods diverge in notable ways. Although both organizations strive to foster peace and unity in Zambanga del Sur, they differ in their overall approach. NGO A emphasizes Indigenous cultural preservation as a route to reconciliation, while NGO B concentrates on broad-based community service to promote solidarity and shared identity.

3.2 The Perceived Challenges of the Implementation of Peace Education Programs

Lack of Interest and Awareness among Indigenous Children

Katy, who has been with NGO A for five years, has noticed a considerable barrier when conducting peace education programs in Indigenous communities. Despite the organization's efforts, she has observed a need for more enthusiasm among Indigenous children in attending school and participating in peace education activities. Furthermore, she has discovered that the leaders in these communities have relatively low levels of peace education awareness, knowledge, and skills.

"The difficulties of implementing this peace education program to the Indigenous people lack their interest among the Indigenous children to be sent to school. Also, leaders were found to have low awareness, knowledge, and skills related to peace education."

The need for more interest among Indigenous children is one of the identified problems in establishing peace education programs within Indigenous communities (King et al., 2004). The lack of interest may be linked to various causes, such as cultural differences and conflicting interests. Indigenous children may value cultural customs and traditions over formal schooling (Begaye, 2007). This results in restricted participation in peace education programs. Also, Indigenous groups' historical marginalization and persecution may contribute to a sense of alienation and suspicion toward mainstream educational endeavors, including peace education. Furthermore, Indigenous leaders' poor levels of awareness, knowledge, and abilities related to peace education impede the promotion and support of these initiatives within the community (Magni, 2017). This limitation emphasizes bridging educational disparities and providing Indigenous leaders with the tools and knowledge to advocate for peace effectively (Khalifa et al., 2018).

Conflicts of Schedule and Limited Funds

Jane, a long-standing organization member of NGO B, has been actively involved in its various efforts for many years. Thanks to her dedication to community service and considerable expertise, she has seen the impact of competing schedules and time constraints on the organization's capacity to efficiently offer services and manage

funds. Managing a successful organization involves coordination and collaboration among its members, yet competing schedules can make it challenging to ensure that services and funds are provided on time and efficiently. Personal commitments, employment obligations, or other responsibilities that compete for members' time and attention might cause such conflicts.

"Conflict of schedule or time of the members to deliver services and funds is a problem."

Conflicts of scheduling and limited time availability among program members have been noted as essential challenges in executing peace education programs among Indigenous groups. Indigenous communities frequently experience many social and economic issues, resulting in competing objectives and time limits for those providing peace education services (Marten, 2004). This limitation hinders the effectiveness and reach of peace education programs because educators and facilitators may need help to devote enough time to program implementation, workshops, and activities. Furthermore, insufficient funding presents an additional issue since it affects the availability of resources required for high-quality peace education projects (Leicht et al., 2018). Inadequate financing can limit educator training, purchasing of educational materials, and staging of community involvement events.

Noncompliance with Requirements and Lack of Support

Jane's experience inside the organization has indicated that some schools they work with need help to achieve the required requirements, such as presenting an Annual Implementation Plan (A.I.P.). Because they cannot meet these requirements, educational help that may substantially benefit these institutions is withheld. This hampers the organization's efforts to provide these educational institutions with the required help and resources. Despite the challenges, Jane and her organization remain committed to providing educational support and establishing effective programs. They work hard to discover solutions, create collaborations, and push for the necessary funding to ensure that the communities they serve receive the required educational aid.

"Some of the schools did not meet the requirements. They were asked to provide an Annual Implementation Plan (A.I.P.) but did not need help. Thus, they should have been given educational support. Other programs were also not implemented due to a lack of support from partner agencies like L.G.U., RHU, and DepEd."

Noncompliance with standards and a lack of assistance from partner agencies are critical challenges in executing peace education programs among Indigenous people. Some Indigenous communities' schools need help to meet educational authorities' criteria, such as presenting an Annual Implementation Plan (A.I.P.). Due to noncompliance, schools may be denied instructional support, resources, and financing (Brown & Hunter, 2006). Furthermore, the lack of support from partner organizations such as the Local Government Unit (L.G.U.), Rural Health Unit (RHU), and Department of Education (DepEd) can limit the successful implementation of peace education initiatives. Collaboration and coordination among various stakeholders are critical for the long-term implementation and impact of Indigenous peace education efforts (Pherali & Lewis, 2019).

A Multi-Case Comparison

A closer look at NGO A and NGO B reveals how each navigates unique hurdles. NGO A faces cultural and motivational barriers, particularly with Indigenous youth who are less inclined toward formal education and with community leaders who lack awareness of space education's significance. It invests heavily in cultural preservation and capacity-building, tailoring its programs to Indigenous customs and bridging knowledge gaps. In contrast, NGO B contends more with logistical and administrative concerns. These include scheduling conflicts among volunteers, insufficient funding, and partner institutions that fail to meet basic requirements for educational support. Despite these differences, both NGOs depend on communal and institutional engagement to sustain and legitimize their peace education work. They illustrate the complexity of peace education in culturally diverse and resource-constrained settings.

3.3 Strategies Utilized to Enhance the Impact and Reach of Peace Education Programs

Enhancing and Reaching I.P. Leaders in the Community

Katy believes in the need to develop and reach out to Indigenous Peoples' (I.P.) leaders in the community. According to her experience in NGO A, when I.P. executives actively participate in and take ownership of programs, their impact and efficacy are considerably increased. She further explained that the active participation of I.P. leaders is critical for pushing action and guaranteeing the education program's successful execution. She underlines that these leaders are essential to the program's success since they have valuable information, insights, and connections within the I.P. community. But in the same breath, Katy has been vocal regarding the disinterest of many I.P. leaders in actively participating in the education program. She recognizes this as a significant obstacle hindering the program's effectiveness and impact within the Indigenous community.

"The Indigenous people's leaders in the community must act for their program to be implemented. All I.P. leaders in the barangay's should be monitored to achieve the education program's success."

One strategy for increasing the impact and reach of peace education initiatives is to target I.P. leaders in the community. These leaders are critical to the programs' successful execution. For example, Leicht et al. (2018) discovered that integrating leaders in the design and execution of education programs boost their effectiveness and cultural relevance. Specific measures, such as direct monitoring and stringent oversight of I.P. leaders in the barangay, are used to ensure the active engagement of I.P. leaders. This method allows the organization to track their participation and address any issues that may arise during program implementation. Through collaborating closely with I.P. leaders, the programs can modify their content and delivery methods to correspond with the community's cultural norms and values, increasing their effect and relevance (Margolis et al., 2015).

Community Involvement and Support

According to Jane, the heart of their joint efforts in NGO B are their unique meetings, where club members convene to plan, share information, and identify solutions to the community's pressing issues. These meetings are more than just formalities; they are active venues where ideas are shared, difficulties are tackled, and solutions are developed with passion and purpose. She also disclosed that members contribute money from their pockets to ensure the community has the resources it needs.

"We conduct special meetings with the members for planning, dissemination, and direct solutions. We sometimes draw funds from our own pockets to help the community. All members must undergo services to the community and directly implement services to the needed society."

Community participation and support are essential for the success of peace education projects (Epstein, 2010). The study discovered that the programs actively include club members in planning, information dissemination, and financial assistance. In a case study conducted by Whitley et al. (2015), a community-based peace education program relied on the active participation of club members who volunteered their time, resources, and expertise to support the program's operations. The study considers that a program's success is hinged on the active participation of members who volunteered their time, expertise, and resources to support their operations. It also emphasizes the importance of volunteerism and resource mobilization.

Members' financial assistance, which comes from their pockets, indicates their dedication to the community and their importance to educational activities. This community-driven approach develops a sense of ownership and allows individuals to actively bring peace to their neighborhood. Furthermore, requiring all members to perform direct services to the community increases the program's impact by ensuring active participation and shared responsibility.

Tailoring Peace Education Programs to Community Needs

Katy's work with Indigenous Peoples (IPs) revealed that some members of these communities are skeptical of the benefits of peace education, thinking that it may clash with their deeply ingrained practices and traditions. This made her realize that implementing conventional programs without considering each community's particular needs and customs could result in resistance and alienation. On the other hand, Katy underlined the significance

of customizing peace education programs to the specific cultural settings and values of the Indigenous group being serviced.

"Some I.P.s do not believe in the benefits of peace education programs because they think this may conflict with their customs. Peace education efforts must meet the community's needs and customs."

To increase the impact and reach of peace education programs, they must be tailored to the specific needs and perspectives of the communities they serve. The study emphasizes the need to develop programs that address the particular needs of the target audience. McPhail (2005) underlined the need to perform a needs assessment to discover the community's specific concerns, values, and goals, ensuring that program material is relevant and practical. This is consistent with UNESCO's (2009) recommendation that peace education initiatives be tailored to the intended audience. The study underlines the importance of completing a needs assessment to determine the community's concerns, values, and goals. Understanding these variables enables program organizers to ensure that the materials and content given are relevant and successful in promoting peace and addressing the community's specific concerns. This further emphasizes the significance of adaptability and customization in peace education programs for optimal impact.

A Multi-Case Comparison

NGO A places a strong emphasis on integrating Indigenous Peoples' (I.P) leaders and adapting peace education to the cultural context of each community. According to Katy, securing active I.P. leadership is paramount, as these leaders possess valuable connections and insights that can legitimize and sustain the program at the grassroots level. NGO A implements direct monitoring to ensure participation and addresses the skepticism of certain community members who worry that peace education might conflict with traditional customs. It aims to create culturally resonant educational experiences. This targeted strategy, although potentially challenging due to low initial interest among some I.P. leaders, underscores a commitment to capacity-building and long-term community ownership.

In contrast, NGO B foregrounds community involvement and support by hosting frequent organizational meetings and requiring all members to directly implement services in the communities. Jan notes that these meetings serve as hubs for planning, information-sharing, and collective problem-solving – members even contribute their personal funds to ensure resources are available. In doing so, NGO B fosters a sense of shared responsibility and inclusivity that crosses tribal or cultural boundaries, which emphasizes volunteerism and resource mobilization. Although both NGOs seek strong local engagement, NGO A build on I.P. leadership and customized approaches, whereas NGO B relied on grassroots participation and personal commitment from its club members. These cases illustrate how organizations can employ diverse yet complementary strategies to maximize the effectiveness and reach of peace education programs.

4.0 Conclusion

The selected NGOs in Zamboanga del Sur have demonstrated a great dedication to fostering peace, maintaining Indigenous culture, and engaging in community service through peace education initiatives. These programs have positively impacted building understanding, respect, and solidarity among diverse people while addressing underlying socioeconomic challenges. However, various obstacles exist to implementing peace education initiatives. The ineffectiveness of these programs is hampered by Indigenous children's lack of interest and awareness and Indigenous leaders' lack of peace education knowledge and skills. Schedule conflicts and limited funding pose additional challenges since they affect the availability of resources and the capacity to devote sufficient time to program implementation. Noncompliance with requirements and a lack of support from partner organizations impede the successful implementation of peace education efforts.

To enhance the impact and reach of peace education programs, strategies such as involving Indigenous leaders in program development and implementation, fostering community involvement and support, and tailoring programs to the specific needs and customs of the community are essential. Active engagement of Indigenous leaders increases program effectiveness and cultural relevance, while community involvement and support ensure shared responsibility and resource mobilization. Customizing peace education programs to community

needs and values promotes acceptance and relevance among the target audience, leading to a more successful outcome.

Strategies such as involving Indigenous leaders in program planning and implementation, encouraging community involvement and support, and customizing programs to the specific needs and customs of the community are crucial for increasing the effectiveness and reach of peace education initiatives. Indigenous leaders' active participation improves program effectiveness and cultural relevance, while community involvement and support ensure shared responsibility and resource mobilization. Moreover, customizing peace education programs to meet the needs and values of the community increases acceptance and relevance among the target audience, highlighting the significance of adaptability and inclusivity in promoting peace education and fostering sustainable change within the community they serve. Overall, the efforts of the selected NGOs in implementing peace education programs in Zamboanga del Sur are commendable. They continue to find ways to address challenges and implement effective strategies. These programs and initiatives have the potential to contribute significantly to peacebuilding, cultural preservation, and community development in the region.

5.0 Contributions of Authors

Darlyn Bucayon – Simbajon – writing, editing, revising
Mary Jane Pingki-an – data gathering, conducting interviews

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7.0 Conflict of Interests

There is no conflict of interest to declare.

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Grit Level and Academic Performance in Science of Students at Risk of Dropping Out

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Abstract. This study explores the grit level and academic performance of students at risk of dropping out (SARDO) in science and the relationship between the two variables. Embedded mixed-method research design was utilized with a survey as the primary quantitative method. At the same time, documentary analysis and Focus Group Discussion with SARDOs and their class advisers are the embedded qualitative approaches. The study found that the grit level of SARDOs has an overall mean of 1.95, equivalent to “Slightly gritty,” which means that they do not have a strong desire to perform better in science. This is evident in their average grade in science for the SY 2023-2024, which shows that 75.73% of them have a “Fairly Satisfactory” performance. Data analysis using Pearson r also revealed that the academic performance in the science of the SARDOs has a highly significant positive relationship to their grit level at 0.91 coefficient of correlation. This suggests that the students with low grit levels have low academic performance in science. It was attributed to the factors disclosed in FGD, such as Poor Literacy and Numeracy, Lack of Self-motivation, Distractions, Economic Factors, Absentee Parents (as uniquely responded by SARDOs), and Mental Condition (as uniquely responded by class advisers). This implies that the development of grit level must go hand in hand with the development of academic performance. This includes proper assessment of the grit level of SARDOs and applying intervention measures such as tutorials, behavioral observations, and counseling programs that target the abovementioned factors.

Keywords: Academic performance; Embedded mixed method; Grit level; SARDO; Students at risk of dropping out.

1.0 Introduction

From a global standpoint, it is undeniable that the nation's progress is highly dependent upon the quality of education its people get. It is one of the most significant elements influencing national growth and a key component in a person's transformation into a productive citizen. However, OECD just recently released the Programme for International Student Assessment (PISA) 2022 results indicating that the students in the Philippines scored less than the average in mathematics, reading, and science, wherein almost no students were top performers in science, meaning that they were proficient at Level 5 or 6 (OECD average: 7%). This is alarming since poor academic performance is strongly linked to school dropout (Oloduwo, Alarape, & Adewole, 2019). If this aggravates, it might contribute to students quitting schooling. The Department of Education identifies them as Student-At-Risk of Dropping Out, commonly known as SARDO.

The dropout rate of students is one of the major concerns in many countries, resulting in a poverty toll and an associated negative economic impact (Dixon et al., 2021). In the Philippines, four out of 10 learners who enter Grade 1 leave school by Grade 10 (Felipe & Marcelo, 2023). Region I also has a dropout rate of 4.04% in the elementary and secondary levels in SY 2019-2020. It decreased to 2.59% in SY 2020-2021, when most students were under modular distance learning due to the pandemic (Philippine Statistics Authority, 2022). Similarly, the Basista District's dropout rate increased from 0.27% in SY 2021-2022 to 1.65% the following year. This poses the question of why this continues despite many studies and interventions. We might be missing an important contributor to this predicament.

Ogresta et al. (2021) found in their study that there is a strong connection between poor academic performance and dropping out. Identified it as one of the four high school dropout types. These are the poor academic achievers, the quiet dropouts, the maladjusted dropouts, and the stressed dropouts. In the local context, Timbal (2019) developed a predictive model to forecast who among the enrolled students will be a dropout. These rules are: if a student has an experience being retained from a previous grade level; if he/she has not experienced retention but his/her number of siblings is more significant than six; if a student has not experienced retention nor has greater than six siblings, but his/her general average of previous grade level is pretty satisfactory and satisfactory, then he/she will probably stop from schooling.

Parenno (2023) also pointed out that the high cost of education, student employment, or when the student is seeking employment were the root causes of dropouts in the Philippines. Likewise, Doll et al. (2013) made a comparative analysis of seven nationally representative studies to understand why students drop out of high school. They categorized it into three factors that affect the student's decision; these are: Push factors include school-consequence on attendance or discipline; Pull factors include out-of-school enticements like jobs and family; and Falling out factors refer to disengagement in students not caused by school or outside pulling factors. The first two factors are extrinsic, and the latter is intrinsic. However, an examination of situations and a deeper understanding of the motivations of dropouts and their parents revealed that dropping out is instead a rational choice (Wan, 2022). These empirical studies typically have focused either on dropout intentions or actual dropout, which has been the leading guiding principle in developing the Drop-Out Reduction Program (DORP). However, they have failed to consider the possible interplay of high school students' intrapersonal aspects, such as grit.

Students' choice to drop out or not perform well in school is also explained by the Expectancy-Value Theory by Wigfield et al. (2021). It is a theory of motivation that describes the relationship between a student's expectancy for success at a task or achieving a goal and the value of task completion or goal attainment. SARDOs might not continue or just easily give up if they are not confident in their ability to succeed in a task. Likewise, they will stop if they perceive the task as unimportant, unuseful, or unenjoyable. However, if the students are gritty towards a specific goal, they remain perseverant to succeed no matter how hard their situations are (Duckworth et al., 2007). The results of these studies can be a basis for crafting a DORP plan focused on academic performance and grit level to save potential dropouts. The researcher tries to address this gap by exploring the possibility of personality traits, such as grit, as an indicator of SARDO in the Philippines. The researcher sees that focusing on students' perseverance and interest can reawaken their lost grit and motivation to continue education and improve their academic performance in science.

2.0 Methodology

2.1 Research Design

This study employed an embedded mixed method design where the quantitative and qualitative data are collected simultaneously, but the qualitative data is embedded within the quantitative data (Yu & Khazanchi, 2017). A survey is the primary quantitative method, while documentary analysis and Focus Group Discussions as the embedded research approaches helped uncover the unknown complexities between grit level and academic performance in the science of the SARDOs.

2.2 Research Locale

The study was conducted in Basista District, Province of Pangasinan, Northern Luzon, Philippines. The needed data were gathered from the public high school learners and teachers in the Basista District, Schools Division I of

Pangasinan, which comprises Basista National High School, Dumpay National High School, and Bayoyong National High School.

2.3 Research Participants

One hundred three (103) identified SARDOs were used as respondents for the study through a purposive sampling technique. This comprises 56 from Basista National High School, 28 from Dumpay National High School, and 19 from Bayoyong National High School. Data were obtained from the Open High School (OHSP) Focal Person and directly from the advisers. They were held responsible for the identification of their school's SARDO following the qualification criteria as absenteeism, poor academic performance, undesirable behavior, disability/underlying illness, and early employment (Berto, 2019, as cited by Bibon, 2021) as indicators for at risk of dropping out. Forty-two (42) among them and an additional 35 class advisers were later subjected to Focus Group Discussions.

2.4 Research Instrument

The grit level of SARDO was determined using an expert-validated Grit Scale adapted from Duckworth (2007). It consists of twelve (12) indicators measured on a 5-point scale from which 5 is Very highly gritty, 4 is Highly gritty, 3 is Moderately gritty, 2 is Slightly gritty, and 1 is Not at all gritty. The statements also have a corresponding Tagalog translation. Six experts evaluated the developed questionnaire for content validity. The reliability measure used for analysis was Krippendorff's Alpha. The obtained alpha value was 0.81, indicating that the raters have "substantial agreement."

2.5 Data Collection and Analysis

The researcher first secured all necessary permits from the authorities concerned and asked permission from the respondents and their parents regarding their participation in the research before the study commenced. Also, all ethical considerations and a debriefing plan were furnished to ensure that all personal information disclosed was confidential. Research triangulation was applied in the study, including the questionnaire, documentary analysis, and focus group discussion. A survey questionnaire was the main data-gathering instrument in the study, and it was a Grit Scale adapted from Duckworth (2007). Research experts evaluated it before it was given to the actual respondents. Then, the researcher administered the survey questionnaire to identify SARDOs with the assistance of class advisers. Secondly, the academic performance in science of the respondents was measured through their average grades in science obtained from their class advisers. The grades were correlated to the obtained grit level of respondents to determine the relationship. Thirdly, documentary analysis from different sources such as grade sheets, anecdotal records, attendance sheets, and accomplished home visitation forms substantiate and confirm the veracity of the results. Subsequently, forty-two (42) of them and 35 advisers underwent FGD in 8 batches to shed light on the question posed by the researcher. The researcher also returned to the participants for debriefing at the end of the study.

This study used descriptive and inferential data analysis. Weighted mean was used to describe the grit level of SARDO using the following mean range scales: 4.50-5.00 – (Very much like me) Very highly gritty, 3.50-4.49 – (Mostly like me) Highly gritty, 2.50-3.49 – (Somewhat like me) Moderately gritty, 1.50-2.49 – (Not much like me) Slightly gritty, 1.00-1.49 – (Not like me at all) Not at all gritty. Meanwhile, the level of performance in the science of SARDO was described using the DepEd Order no.31 s.2020 or the Interim Guidelines for Assessment and Grading in light of the Basic Education Learning Continuity Plan where a grade of 90-100 – Outstanding, 85-89 – Very Satisfactory, 80-84 – Satisfactory, 75-79 – Fairly Satisfactory, below 75 – Did not meet the expectation. Furthermore, Pearson Product Moment Correlation (r) was used to determine the relationship between grit level and academic performance in the science of SARDO. Their Grit level was correlated to their average grade in science at the end of School Year 2023-2024 using Microsoft Excel. In addition, the qualitative data obtained from the Focus Group Discussion were interpreted using attribute analysis, which examines the frequency with which specific characterizations or descriptors are used. However, the emphasis is on adjectives, adverbs, descriptive phrases, and qualifiers used by the participants rather than the targets of these parts of speech (Bergin, 2018). This interpretive process was employed to gain insight into the attributions and particular implications of the group discussion results. Lastly, an Implication Analysis of grit level was carried out to formulate an intervention model that would fill the gap in the existing practices in the field.

2.6 Ethical Considerations

Research ethics govern the standards of conduct for scientific research. It is important to adhere to ethical principles to protect research participants' dignity, rights, and welfare. Pondering on this note, the researcher secured all necessary permits from the proper authorities. The purpose and research process were also clearly explained to the participants and their parents before the study. They were told that their participation was voluntary and that all information disclosed to the researcher was confidential. The researcher also returned to the participants for debriefing at the end of the study to ensure that the process had not affected them in any way. As such, this research was reviewed by the ethics committee of the Lyceum-Northwestern University to ensure that the appropriate ethical standards were upheld.

3.0 Results and Discussion

3.1 Grit Level of SARDOs Towards Learning Science

This part presents and discusses the grit level of SARDOs towards learning science. The grit level of SARDO was determined using a grit scale consisting of twelve (12) indicators measured through a 5-point scale from which 5 is very highly gritty, 4 is highly gritty, 3 is moderately gritty, 2 is slightly gritty, and 1 is not at all gritty. Table 1 displays the grit level of SARDOs from the public secondary schools of Basista District, where the overall mean is 1.95 with a descriptive equivalence of "Slightly gritty." Meanwhile, indicator 7, "I often set a goal for my studies or science projects but later choose to pursue a different one," has the highest mean of 2.46 but still falls under "Slightly gritty." This depicts that high-level tasks can be more efficiently accomplished in groups due to difficulty. This result can be related to the Expectancy-Value theory, which states that students will give up the task if they find it hard to accomplish (Wigfield et al., 2021). The teacher should also try to match the challenge level with the abilities of the students to avoid frustration among them.

Table 1. *Grit Level of SARDOs for Every Indicator in the Grit Instrument*

Indicators	Mean	Grit Level
1. I overcame obstacles to complete a significant task assigned to me by my science teacher.	2.36	Slightly gritty
2. In my science activities, new ideas and projects sometimes distract me from previous ones.*	1.95	Slightly gritty
3. My interests in science change from year to year.*	2.21	Slightly gritty
4. Hindrances in accomplishing my science tasks do not discourage me. I do not give up easily.	2.15	Slightly gritty
5. I have been obsessed with a certain science idea or project for a short time but later lost interest.*	1.77	Slightly gritty
6. I work hard to complete the tasks given to me by my science teacher.	2.35	Slightly gritty
7. I often set a goal for my studies or science projects but later pursue a different one.*	2.49	Slightly gritty
8. I have difficulty focusing on science projects that take over a few months to complete.*	1.45	Not at all gritty
9. I finish whatever I begin. I complete all science activities assigned to me.	1.55	Slightly gritty
10. I have achieved a goal that took years of work.	1.48	Not at all gritty
11. I become interested in new things or activities every few months.*	1.67	Slightly gritty
12. I am hardworking. I finish my science tasks no matter how difficult they are.	2.00	Slightly gritty
Overall Mean	1.95	Slightly gritty

Notably, the respondents perceive that indicator 8, "I have difficulty maintaining my focus on science projects that take more than a few months to complete," ranks last with a mean of 1.45, which falls under the "Not at all gritty." This implies that SARDOs were easily distracted by whatever intervening factors diverted their focus. This finding aligns with what the respondents revealed in FGD and with the ideas of Raganta et al. (2021), wherein the SARDOs are preoccupied with their responsibilities due to poor economic status, consequently loosening their stamina to continue their education. Likewise, most students who spend more time on electronic gadgets have a high level of dependency on gadgets and poor academic achievement (Othman, 2020).

3.2 Performance Level of SARDOs in Science

The following are the performance levels of SARDO in science, which were based on the percentage of average grades for the whole school year. These data are further verified through other documents, such as class records, attendance sheets, accomplished home visitation forms, etc., presented by the class advisers and science teachers. It is reflected in Table 2 that most of the respondents have a "Fairly Satisfactory" performance, which is evident at 75.73 %, followed by a "Satisfactory" performance at 14.56%, while 6.80% have reached "Very Satisfactory." Moreover, none of them got "Outstanding." The three students, comprising 2.91% of those who "Did Not Meet Expectations," were enrolled in remedial classes during the vacation. The advisers backed up this data by disclosing in the FGD that SARDOs have to devote serious and sustained effort to pass the subject.

Table 2. *Performance Level of SARDOs in Science*

Grading Scale	Frequency	Percentage	Performance Level in Science
90-100	0	0%	Outstanding
85-89	7	6.80%	Very Satisfactory
80-84	15	14.5%	Satisfactory
75-79	78	75.7%	Fairly Satisfactory
Below 75	3	2.91%	Did Not Meet Expectations

3.3 Relationship Between Grit Level and Academic Performance in Science of SARDOs

This part highlights the relationship between SARDO students' grit levels and academic performance in science. The obtained individual means of their grit level and final grades in science were compared, and the results served as the foundation for interpreting the extent of association between the two factors. Table 3 shows that the academic performance in science of the SARDOs has a highly significant positive relationship to their grit level since the correlation coefficient is greater than the critical value at 1%. The lower the students' grit level, the worse their academic performance in science will be since the coefficient of correlation exceeds 1%. This suggests that the students with low academic performance in science have low grit levels. Therefore, they must develop persistence and an innate desire to learn and perform better in class to get a higher grade and pass the subject.

Table 3. *Relationship of Grit Level and Academic Performance in Science of SARDOs*

Variables	Coefficient of Correlation	Interpretation
Grit Level & Academic Performance in Science of SARDOs	0.910	Highly significant
Critical Values at 2-tail test		
5% level = 0.195		
1% level = 0.254		

This result adheres to the conclusion of Duckworth et al. (2007), who noted that success was a significant predictor of grit. Since intelligence has been proven and documented as a strong predictor of achievement (Pishgadam et al., 2022), educational reformers shall consider personality factors, like grit, to determine the commitment and stamina of the students to finish school. This suggests that students with low grades in previous grade levels must undergo grit level assessment upon enrolment to impede any prefigured academic mishaps.

3.4 Factors Affecting the Grit Level of SARDOs toward their Academic Performance

This section encapsulates the factors affecting the grit level of SARDOs toward their academic performance as perceived by themselves and class advisers. The data presented the significant attributes obtained from focus group discussions.

Common Responses of SARDOs and Class Advisers

Poor Literacy and Numeracy. The SARDOs emphasized their difficulties in engaging themselves during class. The majority said they were having a hard time understanding the science concepts. The teachers claimed that the learners cannot advance into higher competencies since they lack the foundation skills in reading and mathematics. S3 stated that:

"I am having a hard time understanding what I am studying, so when I have to do something, I do not even know what I am going to do."

Similar to the statement of S13, S27 said:

"... it is hard to understand what ma'am discusses, especially when it comes to computations; I am having a hard time keeping up with the lesson because I need to know plus, minus, divide, and multiplication."

The responses above are analogous to teachers T7 and T18 responses:

"They cannot keep up in class because they cannot read or have low comprehension skills ..."

This outstanding problem can be resolved as concluded by Casingal (2022), who used results from the Phil IRI's pre-and post-tests. His study revealed that the Phil-IRI and remedial classes are practical due to the increased number of independent-level learners. Out of 767 learners, 117 become independent readers and 45 non-readers; it goes down to seven. Additionally, remedial classes must be conducted properly, focusing on students' reading

and arithmetic difficulties and identifying least-mastered skills. Also, a system of regular progress monitoring for SARDOs should be established to ensure that interventions are effective and to adjust strategies as needed.

Lack of Self-Motivation. The learner participants manifested a lack of self-motivation in learning. For the respondents, it is irrelevant to put forth effort in studying science since they do not see its immediate application and importance. The teachers even said encouraging them is challenging because they do not manifest the intrinsic desire to perform better. S1 shared:

" I am too lazy to study because I cannot use those things in life."

Likewise, S2 said:

"... I am bored in class".

The teachers also mentioned:

"Sometimes, no matter how much encouragement and effort you give them, it is useless because they do not help themselves."
– T11

"...they are hard to motivate because they show that they are not interested." – T7

"...learning is not their priority"-T30

This conforms to the study of Teng (2024), where motivational beliefs had significant predictive effects on Self-Regulated Learning. Since role modeling has long been proven to promote character and personality formation (Kenny et al., 2004), integrating a growth mindset in schools must be part of intervention plans to address personality and character issues such as poor self-motivation. Growth mindset instruction must be done by integrating autobiographical sketches of local or international figures who went through life difficulties and succeeded in schooling or life. However, the results of Gam-ad (2016) show that SARDOs can still thrive in classes. Engaging the students in enjoyable and unusual activities like games and puzzles improved their learning, as revealed in their pre-test and post-test scores. Teachers should conduct lessons in exciting ways to improve learning, where students become more active, interactive, and entertained while learning.

Distractions. The participants emphasized the learners' difficulties maintaining focus in class because their minds are preoccupied with many things, such as social media, mobile games, commitments, and issues with family and friends. According to S13:

"Even though my teacher is talking, my mind is still in ML (online game) ..."

Likewise, S18 also mentioned that:

"...I always think of Facebook (laughs)..."

Issues with family, friends, and love life are also major contributing factors. S7, S15, and S33:

"...I cannot study well, especially if there is a problem at home"- S7

"Sometimes I am not in the mood to study when my boyfriend and I have LQ (lovers' quarrel..."-S15

"...I am happier when I am with friends... sometimes we are planning an outing or the next thing to do ..."-S33

The teachers also expressed that:

"...students are so addicted to cell phones. That is almost all they do. They do not have time to study." –T16

"Students are so hooked to cell phones. You cannot separate them from the device even for a moment." –T20

This result supports Schmidt's (2020) findings that multitasking while doing schoolwork has a significant detrimental effect on students' learning and performance. Learners must be free from distractions to improve their motivation and self-regulated learning. Teachers can also implement structured classroom routines that minimize distractions, such as designated breaks and clear rules on the use of gadgets during class hours. Likewise, they should be provided with training on strategies to manage classroom distractions and techniques to redirect students' attention effectively.

Economic Factors. Another common theme that emerged was economic factors. The respondents disclosed that life misfortunes tied SARDOs to premature duties, like early employment to sustain family needs, which detracted their long-term commitment to schooling. S23 shared:

"Of course, because I was working, ma'am, I could not study well... I did not have enough money for school."

Likewise, S42 shares the same sentiments:

"I have to help my family to work. Otherwise, we will have nothing to eat".

S9 also added:

"There is no one else to count on at home, just me because my parents are at work. I am tired, so I do not have time to study."

The teachers also shared similar perspectives:

"The others are working students, so they do not have time to study ..." -T2

"Because when the student is receiving money, work will be his priority." -T29

Identifying the grit level must serve as a springboard alongside identifying the causes for dropping out since the literature believes that resilient students do not exhibit quitting behavior despite life impediments (Adebusuyi, 2018). This indicated that some students experiencing economic challenges for dropping out might not display quitting behavior because of their strong determination and will-driven motivation to graduate. The schools can also establish community networks or partnerships to support SARDOs, such as food assistance programs, free school supplies, or childcare services for those with family responsibilities. Moreover, they can develop work-study programs that allow students to earn a small income while completing school tasks and balancing their financial needs and academic responsibilities.

Unique Response of SARDOs

Absentee Parents. The learner participants uniquely responded to the lack of parents' presence. They revealed that their parents' involvement, support, and appreciation of what they do mattered to them. For them, it is irrelevant to exert much effort in their studies when their parents are indifferent. S18 said that:

"...my mama does not care about me... it is okay with her no matter my grade is ..."

In the same manner, S35 answered:

"They do not say anything. They do not even ask how my studies are".

S41 also added:

"Since then (elementary), they have not taught me at home. They are always busy with their work."

This phenomenon is important to consider, given recent research by McCormick et al. (2014) demonstrating that active parent involvement in adolescence predicts lower levels of future school problems. Hence, home-school communication must be established and strengthened through emotionally supportive teachers and administrators. This action can help parents better understand their children's school challenges and monitor their problematic behaviors. Schools are encouraged to create support groups for parents, especially those who may feel disconnected due to work commitments, offering them a platform to share experiences and strategies for balancing responsibilities.

Unique Response of Class Advisers

Mental Condition. The class advisers uniquely responded to learners' underlying mental condition as a contributing factor. They claim that some learners are undiagnosed but with manifestations of learning disability, which causes their low grit level to perform better in their class. The teachers cannot respond appropriately to their needs because of a lack of training.

"Others seem misplaced because even if you know a student has a learning disability, they are still mainstreamed in the class... it would be ok if we had special training to handle their case." -T13

Sakarya and Doenyas (2021) revealed in their study that teachers' special education training increased their willingness to teach inclusive classes and intention to implement special education techniques in the regular education classroom. This means that teachers are willing to teach inclusive classes as long as they know exactly what to do and how to deal with students with special needs inside their classrooms. This suggests that the Department of Education must provide professional development workshops to train teachers on identifying and supporting students with learning disabilities and other mental health challenges. They could also partner with educational psychologists, special education experts, and counselors to assist in diagnosing and creating individualized learning plans for students with mental health or learning difficulties.

3.5 Proposed Intervention Model

This research found that grit level has a highly significant relationship with academic performance in science, and the low grit level of SARDOs is affected by factors such as Poor Literacy and Numeracy, Lack of Self-motivation, Distractions, Economic Factors, Absentee Parents, and Mental Condition as exposed by them and their class advisers during the FGD. These consequently result in their poor academic performance in science. Integrating these substantial elements into the intervention model is vital for identifying and providing intervention measures to SARDOs in a school. The need to explicate grit level beforehand will be the first course for identifying SARDOs in the model. The abovementioned factors are also strategically integrated into the core body of the model - the intervention methods, emphasizing factors directly related to the SARDOs. With these at hand, the researcher proposed the AWA Intervention Model. Figure 1 shows the AWA Intervention Model. It focuses on academics as well as personal and character traits vital to self-improvement. It has three phases: assess, Workout, and Advance/Adjust.

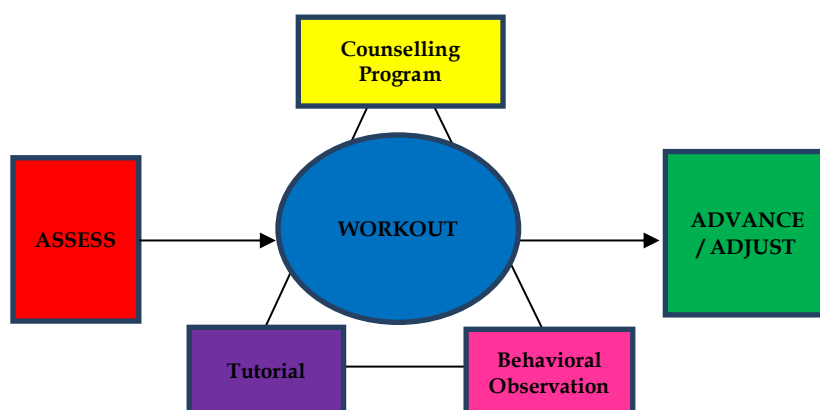


Figure 1. Proposed AWA Intervention Model

Assess. The grit instrument must be used to level off the grit of the incoming students on the first day of classes. Students with poor grit levels (Not At All Gritty and Slightly Gritty) qualify for the intervention plan. This can be verified through interviews with parents and previous teachers.

Workout. This stage lets the teacher do the three processes: Counseling Program, Tutorial, and Observation. The Counselling Program targets personal and environmental factors such as Lack of Self-Motivation, Distractions, Economic Factors, and Absentee Parents to revive grit among students. These factors also affect students' personalities and character and shall be considered for improvement since they contribute to the power of determination in committing to long-term goals (Mellergers, 2018). Another process is the Tutorial, where the students are given one-on-one academic teaching until they finish the class. Instruction with strong remedial components effectively alleviates literacy and numeracy issues (Casingal, 2022). Thus, this is expected to address negative factors such as poor Literacy and Numeracy and, partly, Mental Condition.

The last process under this phase is the Behavioral Observation of whether SARDOs have developed high grit levels or showed no improvement. This is based on students' overt behavior recorded in the teacher's anecdotal records and class performance.

Advance/Adjust. This is the stage in the model where the teacher has to decide whether the students will advance to the next level or adjust and modify the strategies to improve their standing as SARDOs. The cycle of the AWA must be kept continuous for students who showed no significant growth in grit and academic performance.

4.0 Conclusion

The poor grit levels of SARDOs toward learning science are highly related to their final grades in the science subject. This will lead to dropping out if their interest in learning continues to wane. Likewise, SARDOs would be more likely to succeed and improve in their performance if they cultivate their grit toward learning with the help of parents, teachers, administrators, and the community. Moreover, low grit level toward academic performance in science was attributed by SARDOs and their class advisers to factors such as Poor Literacy and Numeracy, Lack of Self-motivation, Distractions, and Economic Factors. Learner respondents uniquely responded to Absentee Parents, while class advisers uniquely responded to Mental Conditions. These contributory factors are concentrated on the learner's personal traits, relationships, and material factors. The teacher factor did not transpire from the responses during FGD, but the researcher does not discount the possibility of its covert contribution.

The data above implies that SARDOs' academic performance in science can be reversed or improved if the identified factors affecting low grit levels are successfully resolved, thus, the proposed AWA intervention model. As such, a grit assessment must be administered to SARDOs upon enrolment. Qualified SARDOs can undergo the *Counselling Program*. Cultivating a growth mindset among students must be the primordial goal of this program. On the other hand, teachers are encouraged to design lessons that connect science concepts to real-life situations (e.g., environmental issues, health, and technology) to demonstrate their practical importance and relevance to everyday life. This further motivates them to learn (Gam-ad, 2016). Through counseling, family-centered interventions involving parents or guardians can be created and intensified to address issues at home that may impact students' ability to concentrate in school. Problems with gadget use can also be resolved by setting clear rules on their use at home and in school during class hours. In addition, community linkages can be established and strengthened to provide support services for SARDOs who are struggling financially.

Tutorials can be given to students with poor Literacy, numeracy, and Mental Conditions until they can finish the class. However, it is better if schools establish clear referral pathways for students requiring specialized support beyond what they can provide, ensuring students receive proper care from external professionals. *Behavioral Observation* can determine whether SARDOs have developed high grit levels or did not show any grit improvement. This should be reflected in the students' anecdotal records and class performance. Following this cycle can help teachers decide whether to adjust the intervention protocol or advance the student to the next level. It is recommended that educators consider using the AWA intervention model in identifying and planning a suitable course of action for learners who are more likely to quit school.

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The sole author conducted this research, including all processes needed for its completion.

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7.0 Conflict of Interests

The author declares no conflict of interest in publishing this research.

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Technostress and its Impact on the Job Performance of Teachers

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Abstract. In the context of rapid technological advancements and challenges posed by the COVID-19 pandemic, this study investigates the impact of technostress on the job satisfaction and performance of 100 faculty members from a private higher education institution in Bacolod City. Using a descriptive survey research design, data were collected through a structured questionnaire. The study examined five dimensions of technostress: Techno-Overload, Techno-Complexity, Techno-Insecurity, Techno-Invasion, and Techno-Uncertainty. Results showed that despite experiencing high levels of technostress, faculty members reported very high job satisfaction and perceived improved performance due to integrating technology into their teaching practices. Analysis revealed no significant differences in technostress levels, job satisfaction, or performance based on sex, teaching experience, or department, highlighting a shared experience across all demographics. The study emphasizes the resilience of faculty in adapting to rapid technological changes, showcasing their ability to maintain high levels of job satisfaction and performance amidst the challenges of digital transformation. However, it recommends targeted institutional strategies, such as regular training, enhanced technological support, and stress management programs, to mitigate the effects of technostress and sustain high levels of satisfaction and performance. These findings underline the importance of proactive measures to support educators in a digitally intensive educational landscape, ensuring their well-being and long-term professional development.

Keywords: Educational technology; Faculty resilience; Job satisfaction; Performance; Technostress.

1.0 Introduction

The COVID-19 pandemic has significantly accelerated the adoption of online teaching methods and digital technologies in education, creating opportunities and challenges for educators. One of the significant challenges that has surfaced is technostress, a form of stress induced by the use of technology (Camacho & Barrios, 2022). The shift to remote teaching and the rapid integration of information and communication technologies (ICT) into instructional practices have increased pressure on teachers, affecting their job satisfaction and performance (Gopal et al., 2021). While studies have not conclusively linked job security with a decrease in teacher well-being, factors such as course design, feedback mechanisms, and student expectations have been identified as critical to both teacher performance and student satisfaction during remote learning (Ozamiz-Etxebarria et al., 2021; Gopal et al., 2021).

The emergence of technostress as a significant concern for educators has been noted in various studies, with the rapid shift to teleworking during the pandemic exacerbating strain, dissatisfaction, and perceived declines in job

performance (Camacho & Barrios, 2022). Technostress has been shown to hinder teachers' ability to effectively integrate ICT into their teaching practices, affecting their willingness to embrace technology (Khlaif et al., 2023). Moreover, research has demonstrated a connection between Technological Pedagogical Content Knowledge (TPACK) and technostress, highlighting its influence on instructional practices and teachers' mental well-being (Rastegar & Rahimi, 2023).

Beyond individual well-being, technostress has broader organizational implications. It can negatively impact teachers' performance, commitment, mental health, and productivity and even contribute to burnout (Gulzar et al., 2022). The presence of technostress generators, such as techno-generators and techno-blockers, has been shown to correlate with reduced productivity and burnout, especially in higher education contexts (Estrada-Muñoz et al., 2022). Furthermore, technostress is closely linked to employee job satisfaction and organizational commitment, necessitating interventions to mitigate its effects and support teachers' well-being (Gabr et al., 2021).

In the context of the pandemic, studies have explored various psychological factors, such as organizational cynicism and COVID-19 anxiety, and their role in predicting technostress among school counselors and teachers (POLAT et al., 2022). However, there remains a gap in research regarding the specific impact of technostress on teachers in the Philippines, particularly in terms of the risk and protective factors influencing technostress and the role of personality traits in online teaching (Mishra et al., 2020). While technostress has been examined among university students, with a focus on its effects on behaviors like cyberslacking, the relationship between technostress and job performance among teachers has not been thoroughly explored, especially in the context of remote learning during the pandemic (Vega-Muñoz et al., 2022; Li & Liu, 2022).

This study aims to fill this research gap by examining the factors contributing to technostress among teachers in the Philippines, focusing on how it affects their job performance. By exploring the interplay between technology, personality traits, and the challenges of online teaching, this research aims to inform interventions that can alleviate technostress and enhance teacher well-being, ensuring the continued quality of education in an increasingly digital landscape.

2.0 Methodology

2.1 Research Design

This study employed a quantitative approach, adopting a descriptive survey research design delineated by Erickson (2017). This method involves observing and recording a subject's behavior without intervention or alteration. The primary aim was to gather data on the prevalence of technostress and its impact on teachers' job performance. Utilizing a descriptive survey enabled the exploration and provision of comprehensive results concerning the incidence of technostress and its effects on educators' professional performance. For enhanced efficiency, cost-effectiveness, rapid turnaround, and ease of administration, the survey was conducted in an electronic or web-based format, as Fraenkel et al. (2011) suggested. Data collection was facilitated using Google Forms, which allowed for a streamlined and accessible means of gathering participant responses.

2.2 Research Participants

This study was conducted in a private Catholic educational institution in the province of Negros Occidental. This institution offers a complete basic education from Kindergarten to Senior High School. Undergraduate, Graduate, and Post-Graduate degree programs are also offered. Moreover, during the pandemic, this institution adopted an online, LMS-based instructional modality. This means that teachers in this institution conduct online classes using technology, making it an ideal setting for observing the prevalence of technostress and its effects on teachers' job performance.

The study's participants were faculty members from the College Department. The total population of the College Department faculty was 116, and the minimum sample size, computed using Slovin's formula, was set at 90. Participants were selected using convenience sampling, a non-probability sampling technique described by Saunders et al. (2019) as involving collecting data from accessible and willing members of the population. The Department Deans facilitated the recruitment process and disseminated the survey link to faculty members. Only those who expressed readiness and willingness to participate were included in the study. Participation was entirely voluntary, and no incentives were provided.

2.3 Research Instrument

This research employed a survey questionnaire as the primary data collection instrument. The questionnaire consisted of two distinct sections. The first section gathered demographic information, such as gender, years of teaching experience, and departmental affiliation, to ensure unique identification of responses. The second section evaluated critical variables relevant to the study, including technostress generators, job satisfaction, and perceived job performance. The items used to measure technostress were based on the framework established by Tarafdar et al. (2007). Each variable related to technostress creators, job satisfaction, and perceived performance was assessed using a set of five items. Respondents rated these items on a four-point Likert scale, with options ranging from 1 (Strongly Disagree) to 4 (Strongly Agree), to quantify their experiences and perceptions of the study variables. The instrument underwent pilot testing with 30 respondents to ensure reliability and clarity. A reliability test using Cronbach's alpha confirmed its consistency. The tool was reviewed and validated by at least five experts in educational technology and psychology to ensure validity.

2.4 Data Gathering Procedure

The data-gathering procedure for this study commenced with the researcher submitting a formal request to the School President via the Vice President for Research, Innovation, and Linkages (VPRIL) to seek authorization for data collection. Once approval was granted, a digital version of the research instrument was prepared. The instrument, comprising a Google Form, included a consent letter and the survey questionnaire. The survey was disseminated to the Department Deans, who emailed it to the intended respondents. To ensure clarity, the communication explicitly stated the study's purpose, the voluntary nature of participation, and the deadline for survey completion. Regular follow-ups were conducted to maximize response rates. Upon completion, the responses gathered via the web-based form were systematically compiled, organized, and analyzed using statistical tools available in Microsoft Excel.

2.5 Data Analysis

The data in this study were treated using several stages of analysis, utilizing Microsoft Excel for data processing. To address the first problem statement, demographic profile information, including aspects such as gender, teaching experience, and department affiliation, was examined using frequency and percentage distribution. Regarding the second problem statement, the study employed descriptive statistics to assess teachers' technostress levels. This analysis encompassed the computation of mean, standard deviation, and frequency distribution, offering a comprehensive overview of the technostress levels experienced. To tackle the third problem statement, the research again applied descriptive statistics to ascertain teachers' job satisfaction levels. This included calculating mean, standard deviation, and frequency distribution to gain knowledge of the overall job satisfaction sentiment. For the fourth problem statement, descriptive statistics were used to evaluate the level of job performance among educators. Metrics such as mean, standard deviation, and frequency distribution provided insight into the teachers' perceived performance in the virtual learning environment.

The fifth problem statement focused on identifying differences in technostress levels based on teachers' demographic profiles. This required inferential statistical methods, such as t-tests or ANOVA, to determine significant variations in technostress across different demographic groups. In addressing the sixth problem statement, correlation analysis explored the relationship between technostress levels and teachers' job satisfaction and performance. Pearson's correlation coefficient was utilized to ascertain the strength and direction of these relationships. The seventh and final problem statement involved developing an action plan derived from a systematic literature review and the findings of this study. This review thoroughly searched for relevant literature on strategies, interventions, and best practices to manage and alleviate technostress. The insights from this literature, combined with the data from this study, informed the creation of an evidence-based action plan to assist teachers in managing technostress and enhancing their job satisfaction and performance during the pandemic. A significance level of 0.05 was maintained for hypothesis testing.

2.6 Ethical Considerations

The researcher adhered to ethical principles throughout the study, observing objectivity and compliance with RA 10173, the Data Privacy Act of 2012. Before data collection, participants were given an informed consent form explaining the study's purpose, procedures, and their rights as participants, including the voluntary nature of participation and their right to withdraw at any time.

Participants were assured of their responses' confidentiality and their identities' anonymity. No personally identifiable information was collected or disclosed. The researcher also ensured that the survey questions were free of discriminatory, offensive, or derogatory language. Data collected were securely stored and used exclusively for the study.

3.0 Results and Discussion

3.1 Profile of the Respondents

The demographics of the respondents provide a critical context for understanding the technostress experienced by educators and its effects on job performance. As summarized in Table 1, the faculty profile highlights characteristics such as gender distribution, department affiliation, and years of teaching experience.

Table 1. Profile of the faculty respondents (n=100)

Items	Frequency	Percentage
Gender		
Male	61	61.00%
Female	39	39.00%
Department		
School of Architecture, Fine Arts & Interior Design	30	30.00%
School of Business & Information Technology	15	15.00%
School of Hospitality & Tourism Management	30	30.00%
School of Sciences, Liberal Arts & Teacher Education	25	25.00%
Teaching Experience		
0 to 5	43	43.00%
6 to 10	28	28.00%
11 to 15	19	19.00%
16+	10	10.00%

The sex distribution of the respondents is presented, revealing insights into the representation within the faculty. With a more significant percentage of males, discussions may further explore whether and how technostress impacts educators differently across gender lines, a query supported by the nuances detailed in prior research by Tarafdar et al. (2007), which highlighted potential gender differences in technostress perception and coping mechanisms. The diversity in teaching experience is outlined, ranging from novices to veterans, offering a spectrum of insights into how technostress might manifest across different stages of an educational career. This profile aspect may be linked to studies like Bao's (2020), which considered how a teacher's preparedness for and adaptability to technology-mediated teaching might vary with their tenure.

The breakdown by department underscores the interdisciplinary nature of the faculty, with each academic domain potentially bringing its unique set of challenges and perspectives to the fore in the realm of technostress. This variability aligns with the multifaceted approach to understanding technostress, suggested by Hartshorne et al. (2020), acknowledging that stressors may be differentially experienced across diverse academic disciplines. The quantitative data captured in this chapter, interpreted through the prisms of established theoretical frameworks and prior research, aim to provide a snapshot of the current state and a directional guide for policy and decision-making that could foster resilience and well-being among educators in the digital age.

3.2 Level of Technostress

Techno-Overload among Faculty

The pivot to online teaching during the COVID-19 pandemic significantly increased educators' interaction with technology, often beyond their coping capacity. Table 2 summarizes the faculty's perceived Techno-Overload, with an overall Average Weighted Mean (AWM) of 2.99, categorized as "High." Specific stressors, such as multitasking due to technology (AWM = 3.01) and the pressure to respond instantly to notifications (AWM = 3.09), were rated "Very High." These findings align with Chiu et al. (2022), who identified Techno-Overload as a primary contributor to technostress. This elevated stress indicates the intensified workload and complexity of tech tools necessitated by the rapid digital transition. Multitasking demands and constant connectivity blur the boundaries between professional efficiency and personal well-being, echoing Bao's (2020) concerns regarding the sustainability of such demands. Institutional strategies should address these challenges by streamlining technological workflows and fostering support systems to alleviate the burden on educators.

Table 2. *Level of technostress among faculty respondents in the dimension of techno-overload*

Indicators	Mean	Interpretation
1. I am forced by technology to multitask and do more work than I can handle.	3.01	Very High
2. I am forced by technology to work much faster.	3.10	Very High
3. I feel overwhelmed by the number of tech tools I am required to use.	2.97	High
4. I need to respond to technological notifications related to work instantly.	3.09	Very High
5. I have a higher workload because of increased technology complexity.	2.80	High
Overall	2.99	High

Techno-Invasion among Faculty

Techno-Invasion, another dimension of technostress, highlights the intrusion of technology into personal spaces and its impact on work-life balance. Table 3 reveals an overall AWM of 2.81 ("High"), with the highest-rated indicator being the obligation to stay connected to work during vacations (AWM = 3.09, "Very High"). These findings reflect Truzoli et al. (2021), who identified the erosion of personal boundaries as a significant stressor in technology-intensive environments.

Table 3. *Level of technostress among faculty respondents in the dimension of techno-invasion*

Indicators	Mean	Interpretation
1. I feel my personal life is being invaded by technological advancement.	2.82	High
2. I feel pressured to check work-related tech updates during personal time.	2.94	High
3. I must be in touch with my work even during my vacation due to technological advancement.	3.09	Very High
4. I spend less time with my family due to technological advancements.	2.55	High
5. Technology diminishes my time and space.	2.65	High
Overall	2.81	High

The persistent pressure to remain accessible outside work hours disrupts family time and personal well-being, as evidenced by indicators such as diminished family time (AWM = 2.55) and the general encroachment of technology into personal life (AWM = 2.82). Daley et al. (2020) emphasized that the constant connectivity required by digital platforms exacerbates stress, particularly in remote teaching contexts. To mitigate Techno-Invasion, institutions must establish clear boundaries for work-related technological use and promote practices that respect educators' time. Such initiatives could foster a healthier work-life balance, enabling educators to thrive in increasingly digitalized academic environments.

Techno-Complexity among Faculty

The rapid integration of Information and Communication Technologies (ICTs) into the academic sector, particularly accelerated by the pandemic, has led to a significant transformation in traditional teaching methods. This section of the study explores the challenges faculty members face in managing the Techno-Complexity of their professional responsibilities—a technostress dimension reflecting the complexities of navigating modern educational technologies. The data in Table 4, presented through Average Weighted Mean (AWM) scores, highlights faculty perceptions of Techno-Complexity within their roles. These scores provide insight into faculty members' difficulty in comprehending, using, and adapting to the constant evolution of educational technologies.

Table 4. *Level of technostress among faculty respondents in the dimension of techno-complexity*

Indicators	Mean	Interpretation
1. I do not know enough about ICTs to handle my job satisfactorily.	2.17	High
2. I often find it too complex to understand and use new technologies.	2.32	High
3. I struggle with frequent technological updates and changes.	2.29	High
4. Keeping up with the diverse technological platforms in my job is challenging.	2.47	High
5. The new technologies can be confusing.	2.40	High
Overall	2.33	High

With an overall AWM of 2.33, Techno-Complexity is classified as 'High,' indicating that faculty members perceive considerable difficulty in understanding and keeping up with the ever-changing ICT tools and updated landscape. The challenge of lacking sufficient knowledge about ICTs to perform their duties effectively is reflected in the 'High' AWM of 2.17. Keeping pace with various platforms and the confusion caused by new technologies are also identified as significant stressors, with AWMs of 2.47 and 2.4, respectively. These findings are consistent with research by Chiu et al. (2022), which identifies Techno-Complexity as a central factor contributing to technostress in organizations. The study reveals a widespread concern among faculty regarding their ability to master the

technological requirements of their roles. The consistently high AWM scores across all indicators reflect a shared sentiment that ICTs introduce complexities that challenge the faculty's ability to adapt and perform effectively. This suggests the need for comprehensive professional development initiatives to enhance faculty ICT competencies, thereby reducing technostress and promoting a more supportive environment for teaching and learning in the digital era.

Techno-Insecurity among Faculty

Techno-Insecurity has emerged as a significant stressor for educators in the context of ongoing technological evolution, particularly intensified by the pandemic. This study section investigates how faculty members perceive their job security and professional competence in light of the rapid integration of new technologies. The data in Table 5, again represented through Average Weighted Mean (AWM) scores, reflects how the influx of new technological tools and changes in the technological environment impact faculty perceptions of their job security and professional capabilities.

Table 5. *Level of technostress among faculty respondents in the dimension of techno-insecurity*

Indicators	Mean	Interpretation
1. I do not share my knowledge about technology with my co-workers for fear of being replaced.	1.94	Low
2. I feel a constant threat to my job security due to new technologies.	2.05	High
3. I hesitate to ask for tech help for fear of appearing incompetent.	2.14	High
4. The introduction of new technology tools makes me question my competency.	2.07	High
5. The pace of technological change makes me feel insecure about my job's future.	2.14	High
Overall	2.07	High

The overall AWM for Techno-Insecurity is 2.07, categorized as 'High.' This suggests that faculty members, on average, experience substantial stress regarding their job security and competence due to the technological changes. The highest individual stressor is the fear of appearing incompetent when seeking technological assistance, with an AWM of 2.14. Additionally, concerns about job displacement and the challenge of maintaining competency amid technological advancements heightened the sense of insecurity. These results align with the research by Chiu et al. (2022), which identifies Techno-Insecurity as a major contributor to workplace stress. The concern of being replaced by technological advancements resonates with the concept of 'technological displacement' discussed in their findings. This analysis reveals a widespread insecurity among faculty about their roles and competencies in an increasingly technology-dependent educational environment. The consistently high levels of Techno-Insecurity underscore the necessity for initiatives that enhance educators' confidence in their technological skills and emphasize their irreplaceable value in the educational process. Institutions should consider offering continuous training and creating forums for technological exchange to help mitigate these insecurities and support faculty members adapting to the ever-changing technological landscape.

Techno-Uncertainty among Faculty

The final dimension of technostress explored in this study is Techno-Uncertainty, which represents the anxiety and challenges faculty face due to the unpredictable nature and rapid evolution of educational technology. This dimension is especially relevant in the post-pandemic context, where the accelerated integration of technology has left many educators grappling with constant change. Table 6 uses Average Weighted Mean (AWM) scores to assess the uncertainty and apprehension faculty members experience concerning ongoing technological changes and their implications for professional roles. The overall AWM of 2.41 categorizes Techno-Uncertainty as 'High,' indicating that faculty frequently experience unease about the unpredictable direction of technological advancements. Specific concerns, such as the difficulty adapting to frequent software updates and the anxiety caused by rapid technological changes, are reflected in high scores of 2.55.

Table 6. *Level of technostress among faculty respondents in the dimension of techno-uncertainty*

Indicators	Mean	Interpretation
1. I find it difficult to predict the direction of technological advancements in my job.	2.46	High
2. I often feel unprepared for introducing new technology at work.	2.28	High
3. I am unsure about the long-term benefits of constantly changing tech platforms.	2.55	High
4. It is challenging to adapt to frequent software updates and changes.	2.55	High
5. Rapid technological changes in the workplace make me anxious.	2.20	High
Overall	2.41	High

These findings are consistent with the research by Chiu et al. (2022), which highlights how the rapid pace of technological change can induce stress due to the constant need for adaptation and learning. The study reveals that Techno-Uncertainty is a significant concern among faculty members, reflecting a broader trend in the educational sector, where rapid technological shifts generate considerable anxiety. These results suggest that educational institutions must provide robust support systems, including regular training and clear communication regarding technological changes, to help faculty navigate this uncertainty. By addressing these concerns, institutions can foster a more adaptable and resilient teaching workforce capable of meeting the demands of modern educational environments.

3.3 Job Satisfaction among Faculty

This section extends the study beyond technostress to explore faculty job satisfaction during the COVID-19 pandemic. Understanding job satisfaction is vital, reflecting how the rapid shift to technology-mediated teaching and the associated stressors impact morale and professional contentment. Table 7 presents Average Weighted Mean (AWM) scores for various job satisfaction indicators, such as personal accomplishment, pride in the job, organizational and managerial support, and the adequacy of training amidst increased reliance on technology.

Table 7. Faculty respondents' job satisfaction during the pandemic

Indicators	Mean	Interpretation
1. I am satisfied with the accomplishment I get from my job.	3.41	Very High
2. I feel a sense of pride in doing my job.	3.40	Very High
3. I feel the organization prioritizes employee well-being amidst tech overload.	3.02	Very High
4. I receive adequate managerial support when dealing with technostress.	3.03	Very High
5. The management provides enough training for new technologies.	2.96	High
Overall	3.16	Very High

The overall AWM for job satisfaction is 3.164, categorized as 'Very High,' signaling that despite the challenges posed by technostress, faculty experience a strong sense of fulfillment and support. The highest scores are for personal accomplishment (3.41) and pride in the job (3.40), indicating high intrinsic motivation and job satisfaction. Additionally, the perception of organizational and managerial support in managing technostress is rated positively, reflecting an environment conducive to coping with technological challenges. These findings resonate with Deci and Ryan's (2012) Self-Determination Theory (SDT), which underscores the importance of intrinsic motivation in job satisfaction. Furthermore, the adequacy of support and training aligns with Schaufeli and Taris's (2014) Job Demands-Resources (JD-R) model. This model highlights the balance between job demands and available resources, suggesting that when faculty members are equipped with the necessary tools and training, their ability to manage workloads improves. Despite the challenges of the pandemic and technostress, the positive outlook on job satisfaction among faculty indicates that institutional support, training, and recognition contribute significantly to their sense of accomplishment and well-being. This underscores the importance of maintaining continuous support and resource allocation, particularly during technological and pedagogical transitions.

3.4 Job Performance among Faculty

Understanding faculty job performance is critical in the context of the pandemic's transformation of the educational landscape. This section explores how faculty perceive their efficiency and effectiveness, particularly as technology became central to educational delivery and administration. Table 8 presents faculty perceptions of job performance during the pandemic based on Average Weighted Mean (AWM) scores. These scores assess how technology impacted work quality, efficiency, and competency.

Table 8. Faculty respondents' perceived performance during the pandemic

Indicators	Mean	Interpretation
1. I can provide more accurate and detailed work with the help of technology.	3.47	Very High
2. I feel more competent in my role because of the technological support I receive.	3.37	Very High
3. Technology helps me in delivering higher-quality work.	3.46	Very High
4. Technology-driven automation frees up my time for more strategic tasks.	3.36	Very High
5. The technology available helps me to complete my tasks efficiently.	3.40	Very High
Overall AWM	3.41	Very High

The overall AWM for perceived job performance is 3.41, classified as 'Very High,' indicating that faculty believe technology has positively impacted their work quality and efficiency. Key indicators such as the accuracy and detail of work (3.47) and the ability to free up time for strategic tasks (3.36) reflect a strong belief in technology's positive influence on their professional roles. These results align with Davis's (1989) Technology Acceptance Model (TAM), which suggests that perceived usefulness and ease of use of technology lead to greater acceptance and usage. Additionally, the positive perception of technology facilitating higher-quality work corresponds with the JD-R framework, which indicates that sufficient resources allow faculty to meet job demands more effectively. The findings underscore the substantial role of technology in enhancing faculty performance, particularly during the pandemic's rapid transition to digital learning modalities.

3.5 Difference in the Levels of Technostress According to Profile

The study also explored the differences in technostress levels based on faculty members' profiles, specifically sex, years of teaching experience, and department. Technostress levels between male and female faculty were compared using ANOVA (see Table 9), revealing an Average Weighted Mean (AWM) of 2.515 for males and 2.526 for females, with an F-value of 0.002 and a p-value of 0.962. This finding, marked as 'Not Significant,' suggests that gender does not significantly influence technostress levels among faculty. This result supports prior research (Tarafdar et al., 2007), which suggests that gender does not play a significant role in technostress perception. The similar levels of technostress across genders highlight the need for gender-neutral strategies and interventions to address technostress.

Table 9. *Technostress levels by sex and ANOVA results*

Sex	Mean	F-Value	P-Value	Interpretation
Male	2.515	0.002	0.962	Not Significant
Female	2.526			

When examining the relationship between technostress and years of teaching experience, the study found AWM scores increasing from 2.439 for those with 0-5 years of experience to 2.660 for those with 16+ years (see Table 10). However, the ANOVA results yielded an F-value of 0.241 and a p-value of 0.8663, indicating that differences in experience do not significantly affect technostress levels. This finding aligns with Bao (2020), suggesting that adaptability to technostress may not directly correlate with teaching experience. This highlights the need for universal interventions that support faculty at all experience levels, as technostress appears to be a challenge that transcends years of service.

Table 10. *Technostress levels by teaching experience years and ANOVA results*

Experience (in years)	Mean	F-Value	P-Value	Interpretation
0 - 5	2.439	0.241	0.8663	Not Significant
6 - 10	2.572			
11 - 15	2.570			
16+	2.660			

Lastly, an analysis of technostress levels by the department (see Table 11) revealed AWM scores ranging from 2.394 (School of Sciences, Liberal Arts & Teacher Education) to 2.504 (School of Hospitality & Tourism Management). ANOVA results with an F-value of 0.875 and a p-value of 0.475 indicated no significant differences in technostress levels across departments.

Table 11. *Technostress levels by department and ANOVA results*

Department	Mean	F-Value	P-Value	Interpretation
Architecture, Fine Arts & Interior Design	2.423	0.875	0.475	Not Significant
Business & Information Technology	2.423			
Hospitality & Tourism Management	2.504			
Sciences, Liberal Arts & Teacher Education	2.394			

This finding aligns with the broader perspective in technostress research, which posits that stressors associated with technology use in educational settings tend to be universally experienced, regardless of specific disciplinary contexts (Tarafdar et al., 2019). This homogeneity in technostress responses across various academic disciplines reinforces the notion that the challenges posed by technology integration in education are common to all faculty members, irrespective of their specialized fields. As such, it underscores the importance of educational institutions

implementing holistic and inclusive strategies to address technostress, ensuring that interventions are effective across all departments.

3.6 Relationship of the Levels of Technostress, Job Satisfaction, and Job Performance

This section examines the relationships among technostress, job satisfaction, and job performance, shedding light on how these variables intersect and impact faculty members' professional roles. Correlation analysis reveals that technostress has minimal to no significant relationship with job satisfaction or performance (see Table 12). Specifically, the correlation between technostress and job satisfaction is weak ($r = 0.03$, $p = 0.75$), and between technostress and job performance is slightly negative ($r = -0.12$, $p = 0.25$).

Table 12. *Correlations Among Technostress, Job Satisfaction, and Job Performance*

Correlation Between	(r)	T-test	P-value	Interpretation
Technostress AWM and Job Satisfaction AWM	0.03	0.31	0.75	Not statistically Significant
Technostress AWM and Job Performance AWM	-0.12	-1.15	0.25	Not statistically Significant
Job Satisfaction AWM and Job Performance AWM	0.46	5.11	1.62	Statistically Significant

However, the positive correlation between job satisfaction and job performance ($r = 0.46$, $p = 1.62 \times 10^{-6}$) suggests that higher job satisfaction is significantly linked to improved job performance, aligning with Schaufeli and Taris's (2014) JD-R model. This finding emphasizes enhancing job satisfaction to foster better job performance in educational environments.

4.0 Conclusion

The study offers valuable insights into how faculty members experienced technostress, job satisfaction, and performance during the rapid digital transformation brought about by the pandemic. The key findings indicate that technostress, manifested in Techno-Overload, Techno-Complexity, Techno-Insecurity, and Techno-Uncertainty, was a universal challenge experienced across various demographic groups. Despite these pressures, faculty members exhibited remarkable resilience, maintaining high job satisfaction and performance levels. This resilience can largely be attributed to the institutional support provided, including managerial assistance and training, which helped them adapt to the challenges of a rapidly digitizing educational environment.

These results emphasize the critical role that institutional measures play in helping educators adapt and thrive amidst technological disruptions. They underscore the importance of targeted support systems in fostering positive outcomes and resilience during rapid change. The study also highlights the need for continuous efforts to manage technostress and improve faculty well-being, especially in technology-driven educational landscapes. Future research could further explore the long-term effects of technostress on faculty well-being and performance, particularly the evolution of resilience strategies over time. Additionally, research could investigate the effectiveness of different intervention strategies and support measures, especially in diverse educational settings, to enhance institutional practices. Moreover, further studies may examine how these support systems impact teacher retention, work-life balance, and overall productivity in the context of ongoing technological advancements.

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The author declares no conflicts of interest about the publication of this paper.

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Classroom Management Experiences Through the Lens of Non-Education Graduate Mathematics Instructors

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Abstract. This phenomenological research focuses on the classroom management of non-education graduate mathematics instructors in Ilocos Sur Polytechnic State College (ISPSC). The work applied transcendental phenomenological research design and purposive sampling to choose five participants with teaching experience in classroom management ranging from one to three years. Semi-structured interviews were used to elicit in-depth perspectives, and thematic analysis indicated three main themes. The three areas of significance include (1) the area of classroom management difficulties, (2) the area of classroom management approaches, and (3) the area of professional development. The study reveals the challenges educators face in their classrooms concerning the micro level of interactions, including how to address diverse student behaviors emerging from sociocultural and technological contexts. In addition, the emphasis is placed on the participants' approaches to addressing these problems and their constant demand for relevant professional learning to enhance classroom management expertise. This study enhanced our appreciation of the difficulties of teacher learning in higher education, especially those with no educational background. It points out that much attention should be given to offering them the requisite equipment and training to preserve the joyful learning atmosphere.

Keywords: Classroom challenges; Classroom management; Non-education mathematics instructors.

1.0 Introduction

In the Philippines, many mathematics instructors at Higher Education Institutions (HEIs) graduate from non-educational schools like engineering or related disciplines. Despite their undeniable technical proficiency, their experiences bring to light significant difficulties, especially in classroom management. This tendency is noticeable in state colleges and universities like Ilocos Sur Polytechnic State College (ISPSC), where those with engineering backgrounds and those in other specialized fields get teaching assignments to meet social demand for education and growth. However, these instructors often have issues like not attending school and knowing how to deal with students and handle classroom practice.

Other problems of non-education graduate instructors in HEIs, including the ISPSC, are in handling large and multicultural classes, especially in dealing with freshmen students because they are more directional and require more structure. Bayani and Guhao (2017) mentioned that non-education graduates cannot control student behavior and participation or facilitate the distribution of lessons since they are not trained in classroom management. This is worse in first-year classes where students come from high school and have to transition to a new academic landscape and responsibility, which makes managing student behavior in the classroom a real challenge for instructors who may not have a professional background in education.

Kin et al. (2022) have identified that classroom' diversity in terms of cultural, linguistic, and socioeconomic diversity are extra challenges that non-education graduates experience in the Philippines. In Ilocos Sur, exceptionally, because students' backgrounds may vary, these aspects challenge the class conduct management of instructors unfamiliar with how to employ differentiated instructions. This suggests that particular class conduct strategies are imperative, particularly assuming freshmen students may leave a deficiency related to self-organizing within a university environment. The requirement for successful classroom management tactics is further emphasized by Darling-Hammond et al. (2020), who claim that continual professional development is vital for boosting teaching efficacy and student engagement.

Unfortunately, the COVID-19 pandemic turned education into hybrid and online learning, highlighting non-education graduates' digital management deficiencies, as Malgapo and Ancheta's (2020) research demonstrated. Lack of personal interaction and direction has compounded challenges in managing students, especially concerning discipline during online lessons. Smartphone gaming appears often in online learning scenarios and is still present after the transition to partially physical classrooms. Due to the generally low exposure of the non-education graduates at ISPSC to classroom management frameworks, they are likely to entirely manage these disruptions appropriately.

Some research has been done to address non-education graduates' classroom management problems in tertiary institutions. However, the experience of these instructors, especially in the Philippines, has not been explored, mainly in the rural state colleges and universities, including the ISPSC. Most existing research entails broad teaching processes rather than classroom management in various first-year instruction-based courses. This study intends to analyze the classroom management experiences of non-education graduate mathematics instructors at Ilocos Sur Polytechnic State College (ISPSC) to identify their challenges, their applying techniques, and their professional development requirements. By addressing these concerns, the research hopes to contribute to the knowledge of effective teaching techniques in higher education and provide insights for improving classroom management training for non-education graduates.

This phenomenological study highlights the requirement for specialized professional development programs for non-education graduate mathematics instructors at ISPSC. The participants' experiences indicate a notable deficiency in their capacity to manage classroom behavior efficiently, especially regarding technological distractions and insufficient formal training in pedagogical methods. Garet et al. (2021) assert that targeted professional development can improve instructors' self-efficacy in student behavior management, which is essential for creating a supportive learning environment. This study emphasizes the challenges instructors encounter and stresses the imperative for organized training programs that provide them with the requisite skills and strategies to manage classroom complexities effectively. Meeting these needs is essential for enhancing educational outcomes and guaranteeing that all students can participate meaningfully in their learning experiences.

2.0 Methodology

2.1 Research Design

The researchers employed a transcendental phenomenological research method. Transcendental phenomenology aims to elaborate on the formal features and configurations of experiences without analyzing or redesigning them (AI and the LinkedIn community, 2023). Phenomenological research is fundamentally the research of the phenomenon or the world in its naive, untheorized, and pre-reflective immediacy. In an attempt to understand the phenomenon of the everydayness of the extraordinary, phenomenology asks questions such as: "What is it like?" and "How was it for the individuals and groups of people, the phenomenon?" (Alase, 2017). A 'participant-

orientated' approach will enable the participants to make their presentations and tell their stories as they were willing and able to without prejudice or bias. Based on the transcendental phenomenological research methodology, the researcher explored teacher participants' existential-phenomenological perspectives of approaches to classroom management. Speziale and Carpenter (2007) agree that phenomenology is meant to hire specific phenomena or the look of things as experience.

2.2 Research Participants

The study initially included ten non-education graduates who teach mathematics at a state institution but was reduced to five because of the saturation principle. The saturation principle was applied, indicating that enough data had been collected to investigate the research phenomena adequately. The participants were chosen based on the following inclusion-exclusion criteria: they had to be non-education graduates (i.e., have a degree in a field other than education, such as allied courses); they had to have at least one to three years of classroom management experience; and they could be full-time or part-time instructors willing to share their personal experiences and insights about classroom management in interviews. However, instructors with an education degree were eliminated to focus on non-education graduates, instructors with more than three years of teaching experience, and instructors who refused to engage in interviews.

2.3 Research Instrument

The researchers used a semi-structured interview guide to explore and understand the Instructors' lived experiences. Unlike a structured interview, the interview guide allows for open-ended responses, allowing the researcher to explore further the responses (Bartholomew et al., 2000). To help develop priori codes, the researchers devised interview questions based on the notion of layers of human experience. The researcher creates codes ahead of time while coding qualitative data using a technique known as "prioritization" based on a theoretical framework, an interview question, or prior information (Cumberland & Gosser, 2019). A priori coding allows for more methodical and structured data processing ("Essential Guide," n.d.).

2.4 Data Gathering Procedure

In order to meet the objectives of this study, the researchers conformed to the acceptable semi-structured interview guidelines. A face-to-face interview was undertaken, and the participants had ample chance to answer and narrate their stories; each interview took 30 minutes on average. To ensure all the participants were available, the researchers discussed beforehand the time and the day of the interview. It was shared that at the start of the interview, the researchers read out the purpose of the study, what the study entails, and what the participants are supposed to do. It was established with the concerned human subject and participants to record the meeting to arrive at the consolidation of themes. The interview occurred during the first semester of the school year 2024-2025.

Qualitative data was assessed using thematic analysis, commonly called the assessment of a set of texts, including an interview or transcript, to identify themes and patterns of meaning. Thus, thematic analysis offers excellent freedom in analyzing the data and simplifies the analysis of giant data sets, as Caulfield (2023) observed, which is grouped by themes, according to Pantaleon et al. (2024). First, the researchers built the codes as guidelines to order relevant and methodical data collection. Coding allows as much data as can be gathered to be shrunk to small sizes of meaning. Subsequently, the researchers created topics for the coordinated evolutionary correspondence. The nature of a theme is explained as a pattern that contributes some point of interest or interest worth to the data and the research question. Towards the end of this process, each code culminated in broader themes that captured particular research questions.

The researchers recoded, modified, and created new codes identified in the preliminary themes section. This step involves effecting failing validity by checking the proposed individual themes and whether or not the candidate thematic map has captured the meaning of the analyzed set of data. At this last stage, it is required to review the complete data set to ensure that those themes are acceptable and to encode any residual data within those themes. The next stage is to categorize themes based on their definition in terms of identity and data dimension; the final body of the report is a coherent, logical set containing data extracts augmented with a working narrative.

2.5 Ethical Considerations

In the process of determining the ethical research technique, some factors were taken into consideration. First, the study used informed permission, where participants were explained the aim of the research, their rights, and the probable outcome. Second, participant identification was protected; participants' names and other identifying information were not revealed during this research. Third, there was a case of voluntary participation, which meant that the participants could withdraw from the study if they so wished. Finally, vulnerable people, especially those with psychological disorders, received protection. They were used to protect participants' rights, maintain the study's validity, and demonstrate respect to the participants.

3.0 Results and Discussion

Data gathered from the five (5) participants were thematically analyzed and organized into themes. Three themes emerged: 1) Challenges in Classroom Management, 2) Strategies in Classroom Management, and 3) the Need for Professional Development.

Table 1. Thematic Analysis

Participant	Intelligent Verbatim Transcriptions	Theme
P1	"Students are chitchatting while the discussion is ongoing; some are using cellphones, falling asleep in the classroom, doing homework, and irrelevantly drawing."	Challenges in Classroom Management
P2	"Sometimes, in a class, during a "water break," some students tend to scroll on social media apps rather than discuss or clarify the solution."	
P3	"Boredom or Inattentiveness."	
P4	"Students being distracted, talking during lessons, and not completing assignments on time."	
P5	"Students sometimes use their phones, and others are talkative in their seats."	
P1	"I always prepare ahead of lessons to minimize uncertainty."	Strategies in Classroom Management
P2	"I often leave the final answer for them to supply independently."	
P3	"Group Work then Group Presentation White Board Activities (Raise your board)."	
P4	"Right from the start, I ensure students understand the rules and consequences."	
P5	"One way to make my class lively and active is to know my students first."	
P1	"I am very willing to undergo training and seminars."	Need for Professional Development
P3	"I think professional development workshops on classroom management strategies would be beneficial for improving my skills."	
P4	"Attending seminars and trainings about effective classroom management would help me improve."	
P5	"I still lack training or knowledge in handling behavioral problems."	

The first theme is challenges in classroom management, which discusses the behavioral issues that disrupt the flow of lessons and make it challenging to maintain a focused learning environment, as experienced by the teacher-participants. The second theme, strategies in classroom management, gives an eye-view of how these teacher-participants address behavioral issues by implementing teaching strategies to get attention and discipline students. The third theme, the need for professional development, emphasizes the importance of ongoing training and professional development to improve their teaching skills and classroom management strategies.

Theme 1. Challenges in Classroom Management

The participants mentioned several difficulties they have while trying to control conduct in the classroom. Some of the challenges mentioned were interference from students, chitchatting, and undesirable behavior such as talking during lessons, carrying cellular phones, and even sleeping during the lesson. For instance, P1 said, *"students are chitchatting while the discussion is ongoing; some are using cellphones, falling asleep in the classroom, doing homework, and irrelevantly drawing."*

P2 also said, *"Sometimes, in a class, during a "water break," some students tend to scroll on social media apps rather than discuss or clarify the solution."*

P5 agreed with this, as he said, *"I think the biggest challenge I am facing is to remove that idea from my student that when we talk about Mathematics, it is a hard subject. This is rooted in a negative attitude toward students that leads them to divert their attention outside or do things that are not related to our subject. Students sometimes make use of their phones, and others being talkative in their seats also causes disturbance to other students."*

These experiences showed that the concerns about behavioral patterns described by the teacher-participants, including talking, using cellphones, and even sleeping, indicate destructions in the learning process. This cuts down students' participation levels and lowers the overall quality of education delivered to them. Besides, the challenges of maintaining order in class may make instructors stressed and demotivated because their primary task is to keep on correcting misbehavior instead of teaching.

The participants face challenges in managing student conduct and participation during mathematics lessons. P1 echoed, *"I am always calling the attention of everyone every time I want the class to keep quiet and stay focused in the discussion, but a few minutes later, babalik na naman sila mga mga inuugali nila. These affect my teaching management because their classmates will be affected as well at higit pa doon, di nila nauunawaan ang lessons."*

This sentiment supported P2's observation that *"It is hard to manage pupils' attention and their focus when Behavioral problems interrupt the class. This greatly reduces the time I can spend teaching and my ability to give lessons while keeping my audience's interest."*

In addition, P4 noted, *"Ahm, these behavioral issues disrupt the flow of lessons, making it challenging for me to maintain a focused learning environment and reducing overall teaching effectiveness."*

These issues correspond with the observations made by Simonsen et al. (2020), who stressed the importance of acknowledging the students' behavior and the effects of conducting classroom management on learning accomplishment. These participants' difficulties suggest a need for more current strategies to manage children's behavior in classes and keep them on task. In addition, Kauffman et al. (2020) found that disruptive classroom behaviors influenced teachers' ability to deliver their lessons considerably, which inevitably resulted in significant levels of stress and job dissatisfaction. Moreover, in the study with Emmer & Evertson (2021), teachers found managing student behavior to be the most challenging to their profession, which the participants echoed. Unfortunately, some of the teachers indicated feelings of preparedness in handling disruptions in class proactively, indicating that not all teachers are as challenged as shown by Jones et al. (2022). Moreover, while Smith and Brown (2023) observed that some teachers found that getting friendly with students could help to reduce behavioral problems, it can be understood that it does not seem to be an issue at all.

Theme 2. Strategies in Classroom Management

Everyone mentioned different techniques they have come up with for managing disruptive behaviors in the classroom. P4 said, *"From the start, I ensure students understand the rules and consequences. Consistency is key. I keep lessons dynamic and interactive. When students are engaged, they are less likely to cause disruptions – getting to know my students, building relationships with them, and highlighting and rewarding good behaviors of students. Sometimes, a little praise can go a long way. I use strategies like seating arrangements, visual cues, and routine structures to minimize disruptions. When disruptions occur, I stay calm, address the issue quietly, and avoid escalating the situation."*

Similarly, P3 highlighted group work and presentations to keep students engaged: *"group work than group presentation whiteboard activities (raise your board)."*

P5 emphasized the importance of knowing students and using humor to create a positive classroom atmosphere: *"One way to make my class lively and active is to know my students first. It is also important to apply a sense of humor in discussion like giving "hugot lines" just to make our students feel at ease. Lastly, I believe that students are visual learners, so we need to prepare instructional materials. Since I am teaching mathematics, I need to show the computing process or explain concepts."*

The study results reveal that the teacher-participants' strategies – lesson planning and comedy/humor – are consistent with a set of proactive approaches to support the sustained student's attention and minimize disruptions. This meant that the strategies used in the classroom, including group conduct and other interactive lessons, showed how flexibility in approach to addressing student needs and behaviors has to be embraced in classroom management strategies. Evidence for these strategies as all practice specifies that clear behavioral expectations, meaningful activities, and favorable relationships reduce classroom management issues (Marzano, 2019; Simonsen et al., 2020). The participants' trends indicate the growing respect of the reader- or learner-centered and communication approach to education. Marzano et al. (2019) claimed that active and lively teaching-learning

processes can significantly affect the occurrence of disruptive behaviors in class. The findings also reflected the results of Simonsen et al.'s (2020) study, which states that teachers who effectively set up a schedule and rules for behavior would demonstrate fewer behavioral concerns connected with the strategies specified by the research participants. In addition, Lee and Smith (2021) noted that some approaches, including strict discipline, lead to pupils' resistance, which means that not all strategies are effective in different classrooms. Moreover, Thompson (2023) found that while some of the teachers said that they actively used humor to capture learners' attention, others said that it often caused the creation of more instances of disturbance.

Theme 3. Need for Professional Development

Participants expressed a fair amount of concern regarding practical professional development that would enhance their approaches to classroom management. P1 stated, *"I am very willing to undergo training and seminars to get some strategies to execute classroom management and enhance my teaching pedagogy."*

P3 also pointed out, *"I think professional development workshops on classroom management strategies would be beneficial for improving my skills. Collaborating with experienced colleagues for support and sharing best practices could also enhance my effectiveness in managing student behavior."*

Similarly, P4 said, *"I think that attending seminars and training about effective classroom management would help me improve in managing my classes because, you know, I am not an education graduate."*

P5 also said, *"I still lack training or knowledge in handling behavioral problems."*

The claim on the teacher participants' interest in further professional development shows that improving the strategies to apply when teaching or when handling students is possible and necessary. Instructors from non-teaching fields most need professional development because they may not have been trained in many sound instructional practices and behavior management strategies. This need for professional development demonstrates that, regardless of the background of 'instructors,' continuous training and support can increase their general classroom management and teaching ability. The participants' acknowledgment of gaps in their training needs pinpoints the importance of specific professional development activities to facilitate improvement in their teaching careers. Additionally, Garet et al. (2021) found that teachers with focused professional development had enhanced self-efficacy in managing students' behavior and instructing the relevant courses.

However, Johnson and Lee (2022) indicated that professional development is not helpful in all its interpretations, which confirms that training quality and relevance are vital in influencing the achievement of the program. Meanwhile, this contrasts with the Roberts (2023) study that showed that some of the teachers perceived that they were being flooded with professional development needs that created resistance as opposed to the enhancement of the teaching methodologies.

4.0 Conclusions

Based on the themes demonstrated in the study concerning the classroom management experiences of non-education graduate mathematics instructors, the following conclusions and recommendations can be drawn:

Addressing behavioral issues and promoting student engagement is crucial for enhancing the classroom experience. Effective management strategies that emphasize engagement and clear expectations can reduce disruptive behaviors and improve learning. Continuous professional development is vital for non-education graduate instructors to provide them with the requisite skills and strategies for effective classroom management. It is recommended that educational institutions organize workshops and training sessions centered on classroom management practices designed explicitly for non-education graduate instructors. Such programs could provide practical tools and approaches to boost their teaching efficacy.

Implementing peer mentoring programs in which seasoned educators assist non-education graduates may promote collaboration and knowledge exchange. This method may assist in developing a supportive community that strengthens teaching techniques. It may be suitable for instructors to undergo training on how to incorporate technology to promote student involvement rather than detract from it. This could include ideas for using

educational technology to create interactive and dynamic learning experiences. Institutions can consider creating rules that describe appropriate technology use in the classroom. These principles could assist kids in understanding how to harness technology as a learning tool while limiting distractions. Encouraging a culture of constant learning among professors might be helpful. Institutions might promote continuous education and training, allowing instructors to stay updated on best practices in classroom management and pedagogy.

5.0 Contributions of Authors

Alfred P. Pantaleon- written and edited the research article; Mary Joy J. Rodriguez- edited and enhanced the research article; ZJ G. Villanueva- data analysis of the study, and Avelina C. Visaya- initiated the conduct of the study and supervised the holistic aspect of the research article.

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7.0 Conflict of Interests

The researchers do not have any conflict of interest to declare.

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Individual Ambidexterity and Organizational Performance Among Employees

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Abstract. This study aimed to assess if individual ambidexterity and organizational performance were symbiotic and how uncommon talent helped teams and businesses achieve unprecedented success among outlets of BB Corp. in a quantitative approach. It also tried to figure out the effects of these practices on business performance, specifically profitability and sustainability. With all the challenges encountered by employees and organizations, there was a need to develop awareness and understanding of how ambidexterity affects organizational performance that keeps individuals guided and performing well. This study used a descriptive causal design. The total population was 100 respondents, and a total enumeration sampling technique was applied. The result showed a significant relationship between the manifestation of Individual Ambidexterity and organizational performance level among employees in BB Corp. It also indicated that in terms of Exploration, the general assessment was interpreted as Fully Manifested, while in terms of Exploitation, it was interpreted as Manifested. In terms of Financial, Operational, and Shareholder Return Performance, these are all interpreted as Good. Exploitation significantly impacts the organizational performance level among employees in terms of Financial and Operational Performance. While in Shareholder Return Performance, exploration and exploitation significantly impact the Organizational Performance. This also indicates that the higher the manifestation of Individual Ambidexterity, the higher the organizational performance. The proposed action plan can address the issues and challenges of individual ambidexterity to enhance employee organizational performance. It served as a basis for management practices once found compelling.

Keywords: Individual ambidexterity; Organizational performance; Exploration-exploitation.

1.0 Introduction

The dynamism of the firm context at the intersection of exploration and exploitation leads to the significant global development of ambidexterity as an otherworldly valuable concept rather than a work-arrangement criterion, particularly for business-based surroundings. In the US, it is widely regarded as one of the key ingredients for innovation and adaptability. Balancing new opportunities and optimizing existing resources drives both new opportunities and new resources, an avenue to organizational ambidexterity and long-term success. It needs to cope better with changing and competitive environments to develop a culture of creativity and efficiency. Likewise, in entrepreneurship, ambidextrous thinking is treasured as it fosters the ability of people to juggle both creative thought generation and implementation to solve multifaceted problems of the modern business world.

Exploration is about discovering new ideas and adjusting to change, while exploitation is centered on maximizing current resources and processes for immediate stability. As businesses navigate an increasingly rapid and

interconnected world, the importance of ambidexterity has expanded across various fields, including business, technology, and social development. In this light, the ability to balance exploration and exploitation is crucial for both survival and success. On an individual level, ambidexterity holds particular significance in the Filipino context, where socio-economic and cultural influences shape how people juggle various responsibilities and adapt to changing circumstances. Filipino workers often blend traditional knowledge with modern skills to tackle personal, work-related, and business challenges. This distinctive form of individual ambidexterity enables them to flourish in a constantly evolving landscape.

Comparatively, Mom et al. (2019) emphasized that individual ambidexterity – encompassing exploration and exploitation – plays a crucial role in knowledge accumulation and performance improvement. In the Philippines, employees exhibit individual ambidexterity by applying innovative approaches to optimize existing processes, which enhances organizational survival. At the same time, they engage in exploration to introduce new ideas that lead to better outcomes and help organizations adapt effectively. This fluid integration of exploration and exploitation allows managers and employees to interchange between the two modes rather than being forced to choose between them. The ability to balance exploration and exploitation is essential not only for individuals but also for organizations. Those who can effectively engage in both areas significantly benefit their teams and companies. Individuals with ambidextrous skills play a crucial role in enhancing organizational performance by encouraging creativity, addressing challenges, and adapting to various tasks. Research on ambidexterity has concentrated mainly on organizational ambidexterity, particularly regarding long-term success. However, many small to medium-sized businesses, especially family-owned ones with limited resources, are now struggling to balance existing knowledge with the pursuit of new opportunities. Rapid technological change and growing competition have heightened the conflict between these two approaches, complicating how organizations respond to a fast-evolving external landscape.

At BB Corp., employees find it challenging to sustain organizational performance amid these external pressures. The rising demands on staff and the struggle between exploration and exploitation highlight the critical role of individual ambidexterity in ensuring organizational survival. Employees who can effectively balance these two approaches are more likely to contribute to the company's long-term success. This study aims to investigate the relationship between individual ambidexterity and organizational performance. By employing a quantitative approach, we seek to reveal how this unique skill can enable businesses to succeed. Understanding the impact of individual ambidexterity on organizational performance is vital for creating an environment that promotes both personal well-being and organizational growth while mitigating burnout and safeguarding mental and physical health.

2.0 Methodology

2.1 Research Design

This study employed a quantitative research design, specifically descriptive correlational research, to test the relationship between individual ambidexterity and organizational performance at BB Corp. According to Creswell and Creswell (2022), quantitative research involves testing objective theories by examining relationships among variables, which are measured and analyzed using mathematical methods. This study focused on identifying the relationship between the independent variable (individual ambidexterity) and the dependent variables (organizational performance indicators such as financial, operational, and shareholder return performance). This design allowed the study to determine how the manifestation of exploration and exploitation behaviors in employees might relate to different aspects of performance.

2.2 Research Locale

The study was carried out on all BB Corp. employees across all its outlets located at Brgy. 4, Tanauan City, Batangas Province. This study's research area included all affiliated with BB Corp. Each outlet has a total of thirty-one (31) from restaurants, twenty-five (25) from hotels, twenty-four (24) from business centers, twelve (12) from café, and eight (8) from general services.

2.3 Research Participants

The total population of BB Corp is 100. This study used a total enumeration sampling technique, a form of purposive sampling in which the entire population of the organization is examined to have a particular set of

characteristics. The employees also came from different outlets. They were chosen regardless of sex, age, position, length of service, civil status, number of children, and monthly gross income.

2.4 Research Instrument

This study used a researcher-made survey questionnaire and was divided into two parts. The first part contained questions that determined the level of effectiveness of individual ambidexterity among employees of BB Corp. The last part of the questionnaire included items that measured the quality level of organizational performance of employees in BB Corp. This study followed ethical guidelines, and respondents' participation was voluntary. Several steps were taken to validate the instruments. Education and assessment experts reviewed the researcher-made questionnaires to ensure that study objectives were met. Second, a pilot test with a small sample of respondents identified question-wording ambiguities and assessed the instruments' clarity and comprehensiveness.

2.5 Data Gathering Procedure

This study used specific steps to gather data. First, before the data was gathered, a letter of request was sent to the office of the administration to obtain consent from the selected respondents to conduct the study. Second, after the approval from the administrator, the initial interview was conducted in each outlet, and the study's primary purpose was discussed. Third, due to operational considerations and the shifting schedule of the respondents, the accessed link was given to the managers, supervisors, and leaders so they could forward the Google form link to the target respondents within their shift. Fourth, the researcher assured the respondents that their responses would be kept strictly confidential and that the study's findings would only be used for academic and educational purposes. Lastly, after completing the requirements, the Google form link was shared with the statistician, who assisted in the collaboration, analysis, organization, and interpretation of all the data collected.

2.6 Ethical Considerations

This research study followed ethical guidelines. The respondents' participation was voluntary. They were to opt to dismiss themselves from the study at any time they felt uncomfortable. Their participation was protected from harm: physical, social, psychological, and all other forms of harm were kept to an absolute minimum. A request letter was given to the Administration for permission to conduct the study near the company. Upon approval, the questionnaire linked via Google form was distributed to all Managers, Supervisors, and Leaders of BB Corp and forwarded to their subordinates. Respondents' consent was requested, as well as informing them of the significance and objective of the study. The data and personal information gathered were treated with confidentiality. In addition, only relevant information for academic purposes was disclosed. Furthermore, proper communication of results must be practiced to ensure that this research study is free of plagiarism or research misconduct.

3.0 Results and Discussion

3.1 Individual Ambidexterity Among Employees

The findings (see Table 1) indicated that Exploration, an aspect of individual ambidexterity among BB Corp employees, was fully manifested (mean = 3.27). Notably, the item "Studying new ideas is considered an important aspect of my job role" received the highest score (mean = 3.55), which suggests that employees recognize the value of exploring new ideas as integral to their responsibilities. This aligns with the idea that fostering a culture of continuous learning and creativity can significantly enhance individual and organizational effectiveness. Conversely, "I am provided with opportunities to attend training/workshops that enhance my capabilities" received the lowest score (mean = 2.95), indicating that while employees acknowledge the importance of skill development, opportunities for such growth remain somewhat limited.

This suggests that while BB Corp employees are generally encouraged to engage in exploratory behaviors, such as studying new ideas and stepping out of their comfort zones, they perceive a gap in formal support systems like training and workshops that could further facilitate their professional growth and encourage innovation. The lack of sufficient training opportunities might hinder their ability to continuously enhance their skills and broaden their knowledge base, which are crucial for nurturing individual ambidexterity and fostering organizational creativity.

Table 1. *Manifestation Level of Individual Ambidexterity among Employees of BB Corp. in Terms of Exploration*

Indicators	Mean	Interpretation
1. I feel encouraged to examine new ideas in handling my multiple work	3.45	Fully Manifested
2. My organization supports employees who take the initiative to look into new opportunities.	3.31	Fully Manifested
3. I am provided with resources that enable me to try in my work.	2.97	Manifested
4. I am given autonomy to make decisions in my work	3.13	Manifested
5. Examining new approaches in my multiple tasks is a valuable contribution to the organization.	3.34	Fully Manifested
6. I enjoy stepping out of my comfort zone to explore unfamiliar territories	3.40	Fully Manifested
7. I evaluate diverse options concerning service, activity or process is observed in the company	3.36	Fully Manifested
8. I am provided with opportunities to attend training/ workshops that enhance my capabilities	2.95	Manifested
9. Studying new ideas is considered an important aspect of my job role	3.55	Fully Manifested
General Assessment	3.27	Fully Manifested

Legend: 3.25 - 4.00 Strongly Agree - Fully Manifested, 2.50 - 3.24 Agree - Manifested, 1.75 - 2.49 Disagree - Partially Manifested, 1.00 - 1.74 Strongly Disagree - Not Manifested

Regarding these findings, Tanaka (2023) emphasized that unlearning outdated knowledge and acquiring new skills are essential for promoting individual exploration. Specifically, unlearning can mitigate the inhibitory effects of fixed goal orientations, fostering more flexible and dynamic exploration activities. This supports the current study's observation that although employees value the exploration of new ideas, opportunities for formal learning (e.g., training/workshops) remain underdeveloped. Moreover, Papachroni and Heracleous (2020) highlighted the importance of paradoxical behaviors, such as engaging in hybrid tasks and leveraging prior knowledge, in enabling individual ambidexterity. These behaviors underscore the need for employees to balance exploration with the exploitation of existing knowledge. This balance can be facilitated through supportive learning environments and opportunities for unlearning outdated practices. Thus, the results indicate that while BB Corp employees demonstrate a high level of individual ambidexterity in exploration, the lack of adequate opportunities for skill development and knowledge enhancement through training or workshops limits their ability to capitalize on their exploratory behaviors fully. Managers at BB Corp could consider expanding training initiatives and creating more structured learning opportunities to support employees' continuous development, fostering more incredible innovation and problem-solving capabilities.

The results (see Table 2) indicated that Exploitation, another dimension of individual ambidexterity, was fully manifested (mean = 3.24) among BB Corp employees. The item "I feel encouraged to examine new ideas in handling my multiple works" received the highest mean score (mean = 3.42), suggesting that employees are strongly encouraged to innovate and approach their tasks creatively. On the other hand, the indicator "I believe that my workload is reasonable" received the lowest mean score (mean = 2.82), reflecting a moderate level of agreement with this statement. This result suggests that while employees feel encouraged to explore and innovate in their work, they perceive their workload as somewhat unbalanced or challenging.

Table 2. *Manifestation Level of Individual Ambidexterity among Employees of BB Corp. in Terms of Exploitation*

Indicators	Mean	Interpretation
1. I feel encouraged to examine new ideas when handling my multiple works.	3.42	Fully Manifested
2. I believe that my workload is reasonable	2.82	Manifested
3. My duties and how to conduct them are clear to me.	3.31	Fully Manifested
4. I believe that my superiors recognize my contributions.	3.36	Fully Manifested
5. I feel that I have sufficient opportunities for professional growth.	3.34	Fully Manifested
6. I believe that there is open communication within my organization.	3.10	Manifested
7. I feel that I have a sense of autonomy over my work.	3.15	Manifested
8. I believe that my organization values employee well-being	3.26	Fully Manifested
9. I feel that I am treated respectfully by my co-employees, disregard the position	3.34	Fully Manifested
10. I believe that my organization promotes a culture of trust	3.31	Fully Manifested
General Assessment	3.24	Manifested

The higher score for "examining new ideas in handling multiple works" implies that the organization effectively fosters a culture of innovation through its support for creative thinking and problem-solving. This encouragement can enhance multiple facets of the organization, including innovation, employee engagement, efficiency, and overall job satisfaction. BB Corp can achieve competitive advantages, improved problem-solving abilities, and higher employee retention by encouraging employees to think creatively. However, the relatively lower "workload is reasonable" score highlights a potential challenge. While employees are given room to explore and innovate, there may be concerns regarding the workload's impact on employee well-being.

In light of these findings, Zhou et al. (2023) emphasized that exploration and exploitation processes are interconnected and mutually reinforcing. They argue that when employees can balance both dimensions, innovating and refining existing processes, the organization can better manage innovation and adapt to changing environments. This supports the current study finding that employees' ability to handle multiple tasks fosters innovation, which in turn contributes to individual and organizational growth. Rocca (2021) further elaborated on exploitation, suggesting that it involves decision-making processes that allow organizations to enhance existing capabilities, reduce errors, and identify better alternatives. The current findings align with this notion, as the encouragement to explore new ideas within the context of handling multiple tasks will likely lead to more informed, well-considered decisions that can result in improved operational outcomes.

Zhang et al. (2021) also argued that exploitation focuses on improving existing capabilities and achieving predictable outcomes. In the context of BB Corp, this aligns with the employees' recognition that their workloads are reasonable, as it suggests that employees are focusing on refining their current skills and enhancing their performance to meet organizational objectives. Given this, the company could further invest in targeted training initiatives to enhance employees' skills and knowledge relevant to their roles. Cross-training opportunities could also be valuable, allowing employees to develop versatility and gain expertise in areas beyond their primary job functions, thereby enhancing organizational flexibility.

However, the relatively lower score regarding the reasonableness of workload suggests that employees may be experiencing stress from an overwhelming workload despite the positive encouragement to innovate. This finding underscores the need for management to balance workload demands to maintain employee well-being. Bhat et al. (2023) highlighted that both endogenous (internal workplace-related) and exogenous (macro-level) stressors can negatively affect employees' psychological well-being, potentially leading to burnout and turnover intentions. In the current study, the perception of an unreasonable workload could be seen as a stressor that may have long-term implications for employee retention and organizational stability. Management should, therefore, consider strategies to address workload distribution and ensure that employees' workload does not impede their overall productivity or job satisfaction.

In conclusion, while BB Corp employees feel encouraged to innovate and examine new ideas in managing their work, the perception of an unreasonably high workload suggests a need for better workload management practices. By investing in training, supporting cross-functional skill development, and addressing potential stressors, BB Corp can further enhance the exploitation and exploration dimensions of individual ambidexterity, leading to better organizational outcomes.

3.2 Organizational Performance Among Employees

The results (see Table 3) indicate that Financial Performance among employees of BB Corp was rated as Good (mean = 3.05). The indicator "The organization effectively manages its debt to maintain financial stability" received the highest mean score of 3.18, also interpreted as Good, suggesting that employees believe the company demonstrates strong financial management practices, particularly in debt management. On the other hand, the indicator "I feel adequately compensated for the work I do" received the lowest mean score of 2.71, which, although still rated as Good, indicates that employees are less satisfied with their compensation relative to other aspects of the organization's financial performance.

Table 3. *Organizational Performance Level among Employees of BB Corp. in Terms of Financial Performance*

Indicators	Mean	Interpretation
1. Our organization consistently meets financial performance targets.	2.98	Good
2. I feel adequately compensated for the work I do	2.71	Good
3. Our organization efficiently executes project initiatives	3.09	Good
4. The organization's cost control measures are effective in managing expenses	3.03	Good
5. I believe the organization has achieved a favorable return on investment in recent projects.	3.07	Good
6. The organization effectively manages its debt to maintain financial stability	3.18	Good
7. The organization has sufficient liquid assets to meet short-term obligations	3.16	Good
8. The organization's financial reporting practices are transparent.	3.17	Good
General Assessment	3.05	Good

Legend: 3.25 - 4.00 Strongly Agree – Very Good, 2.50 - 3.24 Agree – Good, 1.75 - 2.49 Disagree – Fair, 1.00 - 1.74 Strongly Disagree – Poor

The higher score for managing debt effectively suggests that employees recognize and appreciate the organization's financial stability, achieved through prudent financial practices and transparency. This contributes to a positive perception of the company's ability to meet its financial targets, maintain profitability, and ensure long-term sustainability. However, the relatively lower score regarding compensation indicates that while employees acknowledge the company's financial stability, they may feel that their compensation does not fully reflect their contributions to achieving these financial outcomes.

These findings suggest BB Corp. has a strong financial performance characterized by efficient resource utilization and effective financial management. The organization's ability to meet its financial targets, including revenue generation, profitability, and cost management, contributes to employee satisfaction and engagement. As Kenton (2023) defined, financial performance refers to subjective measures of how effectively a firm can utilize its assets and generate revenue, which, in turn, impacts the financial well-being of all stakeholders. The strong financial performance reported by BB Corp. aligns with Kenton's view, demonstrating that the company's strategic financial decisions positively impact organizational stability.

In addition, the findings support the work of Gungor et al. (2020), who argued that financial performance analysis is crucial for businesses to adapt to changing market conditions, improve operational practices, and make informed decisions. Gungor et al. (2020) further emphasized that financial performance evaluation, based on data from financial statements like income statements, balance sheets, and cash flow statements, provides a valuable tool for understanding a company's financial health. In the case of BB Corp., the organization's financial performance, as assessed by employees, can be seen as a result of strong financial planning and execution, enabling the company to meet its financial objectives and remain competitive in the market.

However, the slightly lower score on compensation suggests a potential area for improvement in aligning employee rewards with the company's financial success. Ensuring employees feel adequately compensated for their contributions can enhance job satisfaction, motivation, and long-term commitment. These findings echo broader research on aligning financial performance with employee satisfaction. When employees perceive that their compensation reflects their contributions to the company's success, it can increase productivity and a more engaged workforce.

The results (see Table 4) revealed that Operational Performance among employees of BB Corp was rated as Good (mean = 3.11). The indicator "The organization recognizes employee contributions to operational success" received the highest mean of 3.33, interpreted as Very Good. This suggests that employees feel valued and appreciated for their contributions to the company's operational outcomes. Similarly, employees rated the clarity of their work tasks about organizational goals positively, reflecting strong alignment between individual and organizational objectives. However, the indicator "The resources provided to me are adequate for performing my job effectively" received the lowest mean score of 2.91, which, although still considered Good, indicates that employees feel there may be room for improvement in resource allocation.

Table 4. *Organizational Performance Level among Employees of BB Corp. in Terms of Operational Performance*

Indicators	Mean	Interpretation
1. I feel that my work tasks are clearly defined with organizational goals.	3.30	Very Good
2. The resources provided to me are adequate for performing my job effectively.	2.91	Good
3. I receive constructive feedback on my performance.	3.21	Good
4. The communication channels within the organization facilitate efficient information flow.	3.09	Good
5. I have the decision-making authority to carry out my responsibilities.	3.14	Good
6. The organization provides sufficient training and development opportunities to enhance my skills.	2.92	Good
7. The performance evaluation process is fair.	3.00	Good
8. The work environment is conducive to productivity.	3.14	Good
9. The organization recognizes employee contributions to operational success.	3.33	Very Good
General Assessment	3.11	Good

The higher ratings for recognition and alignment with organizational goals imply that BB Corp fosters a culture of engagement and operational success. Employees feel their contributions are acknowledged, enhancing their motivation and commitment. This positive recognition, coupled with aligning tasks with broader organizational goals, suggests that BB Corp has established a strong framework for promoting operational performance.

However, the relatively lower score for resource adequacy indicates a potential gap in equipping employees with the tools and support they need to perform at their best.

These results suggest that BB Corp demonstrates good operational performance, particularly in areas of employee engagement and clarity in goal setting. The company's success in recognizing individual contributions and aligning them with organizational objectives is likely driving employee satisfaction and productivity. However, the lower score on resource adequacy suggests that operational performance could be further enhanced by addressing gaps in resources, which could, in turn, improve the overall effectiveness of the workforce. In this context, Oke (2022) emphasized the importance of identifying problems and providing necessary solutions to ensure the success of operational initiatives. He noted that embracing continuous improvement is crucial for sustaining organizational performance in the long run. BB Corp's recognition of employee contributions and precise alignment with organizational goals aligns with Oke's perspective, highlighting that such practices can drive sustained operational success. However, to truly optimize operational performance, BB Corp must ensure its employees have the necessary resources to carry out their tasks effectively.

Gadwe and Sangode (2019) further highlighted that operational management practices are essential in influencing the performance of an organization. Specifically, they stressed the importance of tailored operational strategies and resource allocation to enhance performance in service-oriented companies. In line with this, Hakanen et al. (2021) emphasized the critical role of job resources in driving work engagement. They found that resources such as skill discretion, job feedback, and team empowerment were key contributors to work engagement, with skill discretion and job feedback being particularly significant across different job types. This research suggests that BB Corp could improve its operational performance by providing these key job resources to employees. Specifically, enhancing team empowerment and skill discretion and offering more comprehensive job feedback could lead to higher levels of employee engagement and, consequently, improved operational outcomes. In sum, while BB Corp demonstrates strong operational performance, with effective recognition of employee contributions and precise alignment with organizational goals, the company should prioritize addressing resource deficiencies. BB Corp can further strengthen its operational performance and increase employee engagement by enhancing the tools and support provided to employees and focusing on key job resources such as skill discretion and team empowerment.

The results (see Table 5) indicated that Shareholder Return Performance was rated as Good (mean = 3.17) among employees of BB Corp. The indicator "I consider the company's anticipated future performance of stock return when making decisions related to employee stock options or other benefits" received the highest mean score of 3.25, interpreted as Very Good. This suggests that employees consider future stock returns an important factor when making decisions about their benefits and stock options. On the other hand, the indicator "The alignment of executive compensation with shareholder returns significantly influences my perception of the company's commitment to shareholder value" received the lowest mean score of 3.13, which was still rated as Good but indicates a moderate perception of the relationship between executive compensation and shareholder value.

Table 5. *Organizational Performance Level among Employees of BB Corp. in Terms of Shareholder Returns Performance*

Indicators	Mean	Interpretation
1. I find satisfaction in the consistency of dividend payouts about the overall shareholder returns.	3.14	Good
2. Awareness of the company's financial performance impacts my perception of the returns received by shareholders.	3.16	Good
3. The company's debt management significantly impacts my perception of its effect on the total amount an investor reaps from investment stability.	3.21	Good
4. The alignment of executive compensation with shareholder returns significantly influences my perception of the company's commitment to shareholder value.	3.13	Good
5. Considering the company's historical performance, I rate its ability to maintain total returns during economic downturns.	3.18	Good
6. I find satisfaction in the transparency of the company's financial reporting practices.	3.14	Good
7. I believe that the company's strategies are aligned with maximizing shareholder value.	3.15	Good
8. When making decisions related to employee stock options or other benefits, I consider the company's anticipated future performance of stock return.	3.25	Very Good
General Assessment	3.17	Good

The overall results suggest that BB Corp. successfully generates value for its shareholders, with its employees actively contributing to the company's financial performance through strategic decision-making and operational

excellence. The higher mean for the indicator on stock return considerations indicates that employees recognize the importance of financial outcomes in their roles, while the slightly lower score on executive compensation alignment suggests that there may be room for improvement in communicating how executive pay is linked to shareholder value. These findings highlight BB Corp.'s effectiveness in maintaining a shareholder-focused approach. The company can align its operational practices with broader financial goals by fostering an environment where employees are attuned to stock returns and shareholder interests. However, the slightly lower score on executive compensation alignment suggests that employees may not fully perceive the link between executive pay and shareholder returns, which could affect their perception of the company's overall commitment to maximizing shareholder value.

In this context, Indeed (2022) defined shareholder return performance as a measure of how well a company generates profits for its investors over time, evaluating the growth of stock prices and dividends over a given period. This metric helps businesses understand how financial performance impacts shareholder satisfaction and decision-making. BB Corp.'s performance, as indicated by employees, suggests a positive outlook in terms of shareholder returns, reflecting the company's operational efficiency and strategic decision-making. Lafont et al. (2020) supported this by highlighting that total shareholder return, measured by changes in share price, is a key indicator of a company's financial health and overall value generation for its investors. This aligns with BB Corp.'s approach, where employees understand the importance of stock performance in shaping the company's financial trajectory and compensation packages. Caselli (2023) also emphasized the relationship between firm performance and shareholder returns, noting that stock options and other benefits are crucial for aligning employees' interests with those of shareholders, ultimately driving better financial outcomes. Additionally, Boakye et al. (2020) discussed how performance-based incentives, particularly executive compensation tied to shareholder returns, play a critical role in guiding leadership to achieve superior financial results. They found a strong correlation between CEO compensation and shareholder return, affirming the effectiveness of aligning executive pay with company performance. In line with this, BB Corp. seems to implement strategies aligning employee and shareholder interests. However, further communication regarding executive compensation could enhance employees' perception of the company's commitment to shareholder value.

However, Edmans et al. (2021) argued that while executive compensation is important, the perceived fairness of compensation, particularly when CEOs demonstrate a commitment to long-term organizational growth, matters most. They emphasized that CEOs' contributions to the company should be recognized through variable pay that responds to performance, even beyond just stock returns. This perspective suggests that, although compensated competitively, BB Corp.'s executives may be more valued for their long-term commitment and leadership in driving company success rather than solely for immediate stock returns. With this, while BB Corp. is performing well in terms of shareholder return, with employees understanding the importance of stock returns and benefits, there is an opportunity to enhance communication about executive compensation further. By better-aligning employee perceptions of executive pay with shareholder value and emphasizing fairness in compensation, BB Corp. can strengthen its commitment to long-term shareholder returns and further engage its workforce in achieving organizational goals.

3.3 Relationship Between Individual Ambidexterity and Organizational Performance Among Employees

There was a significant relationship between the manifestation of individual ambidexterity and organizational performance levels among employees of BB Corp (see Table 6). This was confirmed by the probability values, all below 0.05 ($p = .000$), leading to the rejection of the null hypothesis. Furthermore, the correlation coefficient (r -value) ranged from 0.26 to 0.75, indicating a moderate to strong positive correlation. This suggests that as the manifestation of individual ambidexterity increases, so does the organizational performance level, highlighting the importance of ambidextrous behavior in driving organizational success.

Supporting this finding, Lalegani et al. (2021) emphasized that exploration and exploitation – two key dimensions of individual ambidexterity – are crucial to enhancing team performance, departmental effectiveness, and overall organizational efficiency. Their study found a positive impact of individual ambidexterity on employee performance, reinforcing the significant link between individual behaviors and organizational outcomes. Similarly, Schnellbacher and Heidenreich (2020) discussed the long-term benefits of individual ambidexterity, noting that it fosters knowledge accumulation at the departmental level, ultimately enhancing organizational

exploration and exploitation. This knowledge-driven approach is crucial for achieving higher performance across the organization.

Table 6. *Test of Significant Relationship between Manifestation of Individual Ambidexterity and Organizational Performance Level among Employees*

Individual Ambidexterity	Organizational performance	r value	p value	Remarks	Decision
Exploration	Financial performance	.726**	.000	Significant	Reject Ho
	Operational performance	.341**	.000	Significant	Reject Ho
	Shareholder returns performance	.841**	.000	Significant	Reject Ho
Exploitation	Financial performance	.535**	.000	Significant	Reject Ho
	Operational performance	.752**	.000	Significant	Reject Ho
	Shareholder returns performance	.672**	.000	Significant	Reject Ho

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

Elgendy (2023) further highlighted the interconnectedness between individual and organizational performance, stating that an organization's support system is essential for maximizing individual potential. Individual performance is deeply tied to organizational resources, making companies need to provide the necessary tools and support for their employees to thrive. This finding aligns with the results from BB Corp., where employees with higher levels of ambidexterity contribute more significantly to organizational performance, suggesting the mutual dependence of individual and organizational growth.

Finally, Ayuri and Nasution (2021) stressed that individual ambidexterity and organizational knowledge are mutually reinforcing. They argued that organizational learning capabilities play a key role in supporting individual ambidexterity, which, in turn, enhances team performance. This dynamic is especially evident in organizations led by inspirational leaders who foster an environment where ambidextrous behaviors can flourish. Their research in public sector organizations demonstrated a significant positive effect of organizational learning capabilities on individual ambidexterity, further supporting the idea that both individual and organizational performance is enhanced when both dimensions are nurtured. In this view, the findings from BB Corp. corroborate these studies, indicating that fostering individual ambidexterity positively impacts organizational performance. As such, organizations should invest in both individual development and organizational learning to optimize overall performance outcomes.

3.4 Impact of Individual Ambidexterity on the Organizational Performance Level Among Employees in Terms of Financial Performance

The results (see Table 7) indicated that exploitation significantly impacts BB Corp.'s financial performance, accounting for 48.4% of the variance. The probability value of .000, which is less than the 0.05 significance level, led to the rejection of the null hypothesis, confirming that individual ambidexterity in terms of exploitation plays a significant role in enhancing the company's financial performance. This suggests that employees proficient in exploiting existing resources and capabilities contribute more effectively to the company's financial success.

Table 7. *Regression Analysis on the Impact of the Manifestation of Individual Ambidexterity on the Organizational Performance Level among Employees in terms of Financial Performance*

Variables	Unstandardized B	Std. Error	Standardized B	t	P value	Remarks	Decision
(Constant)	.905	.234		3.86	.000		
Exploration	.055	.120	.059	0.45	.648	Not Significant	Accept Ho
Exploitation	.606	.121	.647	5.02	.000	Significant	Reject Ho

R - Square = .484, Adjusted R Square = .230, F-value = 18.588, Significance = .000

However, exploration, another dimension of individual ambidexterity, was found not to affect the financial performance of BB Corp. significantly. This finding aligns with previous research by Ansah et al. (2021), who noted that while both exploration and exploitation have positive impacts on employee attitudes, only exploitation had a significant influence on the financial performance of banks. They observed that exploration, although beneficial for fostering innovation and long-term growth, did not significantly impact financial outcomes in their study. Their findings suggest that in specific industries, including banking, a greater emphasis on exploitation – maximizing current resources and optimizing existing processes – may immediately impact financial performance more than exploration, which involves seeking new opportunities and innovations.

Ansah et al. (2021) further argued that ambidexterity is not automatically beneficial in all sectors or companies. To improve financial performance, particularly in the banking sector and developing nations, there is a need to strengthen the exploratory capabilities of employees alongside exploitation. This suggests that while exploitation may drive short-term financial gains, a balanced approach incorporating both exploration and exploitation could be essential for sustaining long-term financial growth. In summary, the findings from BB Corp. underscore the importance of exploitation in driving financial performance, while exploration appears to have a more indirect influence. This highlights the need for organizations to strategically manage both dimensions of individual ambidexterity to optimize their financial outcomes, with a particular focus on maximizing exploitation in the short term while nurturing exploration for future growth.

The findings (see Table 8) revealed that exploitation significantly impacts operational performance, accounting for 71.0% of the variance in this dimension. The probability value of .000, which is below the 0.05 significance threshold, led to the rejection of the null hypothesis, confirming that individual ambidexterity in terms of exploitation plays a substantial role in enhancing the operational performance of BB Corp. In contrast, exploration did not significantly affect operational performance, indicating that while exploration contributes to long-term innovation, it does not directly influence the day-to-day operational efficiency in this context.

Table 8. Regression Analysis on the Impact of the Manifestation of Individual Ambidexterity on the Organizational Performance Level among Employees in terms of Operational Performance

Variables	Unstandardized B	Std. Error	Standardized B	t	P value	Remarks	Decision
(Constant)	-.017	.211		-.080	.936		
Exploration	.112	.109	.099	1.02	.306	Not Significant	Accept Ho
Exploitation	.854	.109	.759	7.85	.000	Significant	Reject Ho

R – Square = .710, Adjusted R Square = .704, F-value = 119.786, Significance = .000

These results align with Al-Khatib's (2023) study, which explored how supply chain ambidexterity influenced operational performance in manufacturing firms in Jordan, particularly in the context of Industry 4.0 capabilities. Al-Khatib found that exploration and exploitation significantly and positively impacted operational performance, with Industry 4.0 capabilities acting as a mediator. This suggests that advanced technological capabilities can enhance exploration and exploitation, improving operational outcomes. However, the findings of this study differ in that exploitation, rather than exploration and exploitation, was the only dimension to significantly impact operational performance.

This distinction highlights that in specific contexts, such as BB Corp., maximizing existing processes and resources through exploitation can have a more immediate and measurable effect on operational performance compared to exploration. While exploration fosters innovation and adaptability, its impact on operational performance may be more indirect and require a longer time horizon to materialize fully. Furthermore, the results emphasize the importance of focusing on exploitation to drive short-term operational improvements while recognizing that exploration could contribute to long-term sustainability and innovation.

The findings (see Table 9) revealed that exploration and exploitation significantly impact the manifestation of individual ambidexterity and organizational performance, specifically regarding shareholder return, accounting for 3.18% of the variance. The probability values of .000 and .035, below the significance threshold of .05, led to the rejection of the null hypothesis, confirming that individual ambidexterity in both exploration and exploitation contributes to the company's shareholder returns. This suggests that employees' ability to balance the exploration of new opportunities with the exploitation of existing resources positively influences the financial value generated for shareholders.

Table 9. Regression Analysis on the Impact of the Manifestation of Individual Ambidexterity on the Organizational Performance Level among Employees in terms of Shareholder Return

Variables	Unstandardized B	Std. Error	Standardized B	t	P value	Remarks	Decision
(Constant)	1.86	.243		7.67	.000		
Exploration	-.26	.125	-.317	-2.14	.035	Not Significant	Reject Ho
Exploitation	.67	.125	.796	5.38	.000	Significant	Reject Ho

R – Square = .318, Adjusted R Square = .304, F-value = 22.818, Significance = .000

Heidenreich et al. (2020) provide further context to these findings by validating the benefits of organizational ambidexterity for long-term company performance. Their study identified two key mechanisms that describe how information flows within individual ambidexterity: ambidextrous knowledge offering and ambidextrous knowledge seeking. The authors found that ambidextrous knowledge seeking is more effective in environments prioritizing incremental innovation, while ambidextrous knowledge offering drives higher performance in environments focused on radical innovation. This distinction aligns with the findings from BB Corp., where a balance between exploration and exploitation may similarly enhance both short-term shareholder returns and long-term performance outcomes, depending on the company's strategic priorities and innovation goals. Lastly, the results underscore the importance of fostering exploration and exploitation within the organization. By doing so, BB Corp. can optimize shareholder returns, demonstrating how individual ambidexterity can contribute to operational and financial performance and the creation of value for investors.

4.0 Conclusion

In terms of exploration, individual ambidexterity among the employees of BB Corp. is manifested through their recognition that valuing and staying current with new ideas and advancements in their field can significantly enhance their effectiveness. This encourages lifelong learning, which advances the company's expansion and individual and professional development. On the other hand, in terms of exploitation, individual ambidexterity is reflected in employees' ability to handle multiple tasks. The organization can gain from increased innovation, problem-solving, flexibility, employee engagement, learning and development, competitive edge, efficiency, and improved employee retention due to their encouragement to explore new ideas through multitasking.

Additionally, while BB Corp. consistently meets its financial performance targets, the transparency in its financial reporting practices is also rated positively. These factors indicate that BB Corp.'s employees are performing well in terms of utilizing company resources effectively to achieve financial goals. In terms of operational performance, employees feel that their work tasks are clearly aligned with the organizational goals. This alignment reveals that BB Corp. focuses on quality management and process improvement, contributing to overall operational success.

Finally, concerning shareholder return, the data suggest that BB Corp. is effective in creating value for its shareholders through various initiatives and operational excellence driven by its ambidextrous employees. The study concludes that there is a significant relationship between the manifestation of individual ambidexterity and the organizational performance level among employees at BB Corp. The null hypothesis was rejected since the probability values for each variable were .000, below the significance level of .05. The correlation coefficient (r-value) ranged from 0.26 to 0.75, indicating a moderately small to high positive correlation. This demonstrates a substantial link between individual ambidexterity and organizational performance levels, suggesting that the higher the manifestation of individual ambidexterity, the higher the organizational performance.

In particular, the study found that individual ambidexterity in terms of exploitation positively affects both financial and operational performance at BB Corp. Conversely, individual ambidexterity in terms of exploration does not significantly impact either financial or operational performance. However, exploration and exploitation significantly influence shareholder returns, indicating that the manifestation of individual ambidexterity in these areas contributes to the company's overall shareholder value.

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The authors indicate equal contribution to each section. The authors reviewed and approved the final work.

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Teachers' Motivations, Challenges and Difficulties in Action Research: A Narrative Study

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Abstract. Action research is a powerful tool for teachers to engage in reflective practice and drive educational improvement in addressing context-specific issues within schools. While action has been widely recognized as a valuable tool for improving teaching practices, there remains a limited understanding of the specific motivations, challenges, and difficulties teachers face in conducting action research, particularly in the context of public schools in the Philippines. Existing studies often focus on quantitative data, leaving a gap in narrative-driven, teacher-centered insights. This study explored the motivations, challenges, and difficulties of teachers at Isulan National High School (INHS) face when conducting action research. A narrative research design was employed to capture in-depth responses, with data collected through semi-structured interviews. Five teachers were selected using purposive sampling to represent various positions, including Teacher I to Master Teacher II. Thematic analysis revealed that teachers are primarily motivated by a desire for positive change, real-world engagement, skill enhancement and personal growth, collaboration, and adaptability in addressing educational challenges and improving pedagogical practices. However, significant challenges hinder their ability to conduct action research effectively. These include time constraints due to heavy workloads, resistance to change from colleagues and administrators, sustainability issues in implementing research findings, negative perceptions and attitudes toward research activities, and a lack of conceptual knowledge about research methodologies. Despite these barriers, participants believed that action research is vital for professional development. It provides opportunities for skill enhancement, critical reflection, self-improvement, and exploration of innovative strategies to impact teaching and learning positively. Furthermore, the study recommends the need for targeted professional development programs, improved resource allocation, and the establishment of a supportive research culture. These measures are essential to ensure the sustainability and effectiveness of action research in enhancing educational practices at INHS.

Keywords: Challenges and difficulties; Motivations; Negative perceptions; Pedagogical improvement; Positive change.

1.0 Introduction

In today's educational system, research is stipulated in the K to 12 education curriculum as one of senior high school's most important essential learning competencies. Students are required to conduct research in their subjects, Practical Research 1 and 2. Teacher researchers, administrators, school counselors, and other teaching and learning stakeholders conduct action research to better understand school operations, teaching, and student learning. Castro and Castro (2022) emphasized that the Department of Education (DepEd) continues to advocate for a research culture because it is critical to improving the delivery of high-quality educational services. As

specified in DepEd Order No. 43, s. 2015, DepEd is required to conduct national educational research and studies that will serve as the foundation for necessary policy changes, reforms, improvements, and innovations.

According to Bullo et al. (2021), conducting research that leads to improvements and innovations is an effective way to help individuals acquire essential skills to complement their knowledge. However, producing new information and applying it has proven to be challenging for most teachers working in research. Likewise, teachers must research as mandated by the DepEd under the Basic Education Research Agenda (BERA), anchored on DepEd Order No. 13, s. 2015. DepEd is also mandated to "undertake national educational research and studies," which can form the basis for necessary reforms and policy inputs (Chapter 1, Section 7 (5) of RA 9155). Moreover, including research as one of the Key Result Areas (KRAs) on the Individual Performance Commitment and Review Form (IPCRF) for Master Teachers highlights research's vital role in education. All Department teaching and non-teaching staff must engage in research for priority improvement projects for future reference and adjustments. Unfortunately, many teachers are reluctant to engage in research due to the perception that research is complex (I. G. Tanate and R. Llorente, personal communication, December 15, 2022). It is also important to note that action research can be a pathway for professional growth and development, which could lead to promotion (Salacdanan, 2022). This could result in salary increases and opportunities for professional development.

Similarly, Gebeyew (2017) points out that teachers and students rarely engage in action research. As a result, instructors' classroom expertise is often overlooked, and teachers do not utilize action research to modify and improve their teaching methods. Isulan National High School (INHS) is in its first year of institutionalizing a culture of research. This initiative was introduced during the School Learning Action Cell (SLAC), where teachers from Grades 7 to 12 were encouraged to submit action research proposals to the region. Several studies have been conducted on teachers' lived experiences and attitudes toward conducting action research (Castillo, 2009; Namanji & Ssekyewa, 2012; Shafqat et al., 2018; Bahadori et al., 2015). However, limited literature has been published that explores the motivations, challenges, and difficulties of conducting action research in specific schools using a qualitative research approach.

INHS is one of the largest schools in the Division of Sultan Kudarat, with over 5,000 students and 195 teaching and non-teaching staff. However, only seven action research proposals were submitted for the 2023 Basic Education Research Fund; of those, only three were granted funding. Unfortunately, the majority of educators do not find research appealing. One of the critical barriers is the lack of skills in conducting research and limited background in research writing, which hinders their confidence and ability to engage in scholarly activities. Many teachers struggle with understanding research methodologies and the technical aspects of proposal writing, data analysis, and interpreting findings. Additionally, the scarcity of seminars and training programs to enhance teachers' research skills worsens this problem. Although many school interventions are data-based, schools face numerous problems and challenges that would make excellent subjects for research, particularly in investigating how to implement school interventions more efficiently and successfully.

Additionally, INHS has many teachers capable of using action research methodologies to investigate and improve their pedagogy. Given the challenges mentioned, the researcher aims to conduct this study to explore the motivations, challenges, and difficulties teachers face in institutionalizing a culture of research. This will help establish an intervention program to address the problems and concerns of teachers in conducting action research. The results of this study may serve as a basis for strengthening the School-Based Research Program, the proposed Mentoring and Coaching Program in the School Learning Action Cell (SLAC), the School-Based Action Research Competition, and the researcher's initiatives.

2.0 Methodology

2.1 Research Design

The study utilized a qualitative narrative research design to understand teachers' motivations, challenges, and difficulties when conducting action research.

2.2 Research Locale

This study was conducted at Isulan National High School (INHS) in Isulan, Sultan Kudarat, Region XII. INHS is one of the largest secondary schools in the Sultan Kudarat Division, serving a diverse student population and

employing teachers across various subject areas. The school was chosen for this study due to its active participation in institutionalizing a culture of research among its faculty. INHS has implemented action research initiatives to address classroom challenges, innovate teaching strategies, and contribute to overall educational improvement

2.3 Research Participants

The study participants were five (5) teachers holding various teaching positions, each with experience conducting action research. According to Creswell (2012), 3-15 key informants are sufficient for a qualitative inquiry, provided they can offer adequate information for the study. Written consent was obtained to ensure the participants' voluntary involvement in the research. The criteria for selecting participants included having at least one year of teaching experience, prior involvement in action research, willingness to participate and share insights, and holding a teaching position relevant to the scope of the study. These criteria ensured that participants could contribute meaningful and relevant data to the research.

2.4 Research Instrument

This study utilized an evaluation instrument to assess the validity of the developed semi-structured questionnaires, which were validated by three validators: one Master Teacher I and two Teacher III, both currently pursuing their doctorate degrees. A survey instrument adapted from Sacdalan (2023) was used. The study employed a five-point Likert scale type of questionnaire.

2.5 Data Gathering Procedure

Prior to the interviews, written informed consent was obtained from all participants, ensuring their voluntary involvement and maintaining the confidentiality of their responses. Semi-structured interviews were conducted in a private and comfortable setting within the school premises. The interviews, lasting between 30 and 60 minutes, followed a validated guide with open-ended questions designed to elicit detailed responses related to the research questions. With the participants' consent, all interviews were audio-recorded to ensure data accuracy, and the recordings were transcribed verbatim. Following the transcription process, the participants were allowed to review their interview transcripts through member checking, ensuring the accuracy of the recorded data. All personal identifiers were removed from the transcripts to maintain confidentiality, and the data was securely stored and accessible only to the researcher.

2.6 Data Analysis

The researcher utilized Thematic Narrative Analysis using the Collaizi Method to systematically examine the qualitative data collected from teacher interviews. This method emphasizes a systematic and structured approach to analyzing qualitative data, ensuring the findings remain rooted in participants' authentic narratives while identifying common themes and patterns. It aligns with the research questions by allowing the researcher to delve deeply into participants' experiences, uncovering rich, detailed insights about their personal and professional journeys.

The analysis process began with the familiarization stage, where the researcher repeatedly listened to the audio recordings of the interviews and thoroughly read the transcriptions to gain an in-depth understanding of the data. During this phase, initial notes were taken to capture early observations and insights about shared experiences and challenges faced by the participants. Next, the researcher performed initial coding by carefully reading the transcriptions and highlighting key phrases or ideas that directly answered the study's research questions. Each data segment was assigned a specific code representing a relevant theme. Once all the codes were generated, the researcher used the Affinity Diagramming Technique (KJ Method) to organize similar codes into broader categories. This allowed the researcher to group related responses, forming categories representing various aspects of teachers' experiences with research.

After forming these categories, the researcher identified overarching themes by examining deeper connections within the data. Themes emerged from the categories to capture the key ideas that encapsulated the participants' experiences about their motivations, challenges, and difficulties. Once the themes were established, the researcher proceeded to the interpretation phase, linking the results to the research objectives and existing literature. This allowed the researcher to explain the identified themes and place the results within the broader context of teacher-

research and educational practices. The researcher maintained an audit trail throughout the analysis by documenting all coding decisions, category formations, and theme developments. It ensured that the analysis was transparent, systematic, and traceable, providing credibility to the study's results.

2.7 Ethical Considerations

Before conducting the study, the researcher ensured ethical guidelines were followed by obtaining approval from the school division Superintendent and securing the principal's endorsement. The researcher also prioritized obtaining informed consent from all participating teachers. The purpose of the study and its potential outcomes were clearly explained, highlighting that their participation was entirely voluntary. To protect the participants' privacy, the researcher ensured confidentiality and anonymity by safeguarding all personal information and preventing any sensitive details from being disclosed. These measures were implemented to protect the identities and the information shared by the teachers during the study.

3.0 Results and Discussion

3.1 Teachers' Motivations

There were 13 initial themes under Teachers' Motivations. From this, there were five (5) relevant themes generated: (1) Motivation for Positive Change; (2) Real-World Engagement; (3) Skills Enhancement and Personal Growth; (4) Collaboration and Adaptability; and (5) Improving Educational Practice.

Motivation for Positive Change

Motivation for a positive change in conducting action research reflects why teachers are eager to engage in research, such as improving student learning outcomes or addressing classroom challenges. This motivation often derives from a desire to refine teaching methods, meet curriculum demands, or respond to feedback from school leadership. These internal drivers encourage teachers to actively pursue and sustain research initiatives, demonstrating their commitment to continuous improvement and professional development. It is exemplified in the excerpt below:

Informant 2: "My motivation for conducting action research stems from the desire to drive positive change and enhance practical outcomes."

The teacher's response to a positive change in conducting action research reflects the intrinsic drivers that inspire teachers to actively embrace research as a tool for professional growth, ultimately contributing to a positive transformation in teaching practices and educational outcomes. According to Klassen and Tze (2014), teachers who engage in research activities are likelier to experience a sense of accomplishment and empowerment, contributing to a positive change in their professional outlook. It is supported by the study of Garet et al. (2015), which emphasizes the connection between teacher motivation and professional development outcomes. Teachers who are intrinsically motivated to improve their practice through activities such as action research are more likely to experience positive changes in their instructional methods.

Real-World Engagement

Teachers underscore the practical involvement of educators in authentic and context-specific research endeavors. It emphasizes the application of research in addressing actual challenges within the school environment, promoting a hands-on and impactful approach to professional development, as mentioned here:

Informant 3: "By actively engaging in research within real-world contexts, I aim to identify effective solutions, refine strategies, and contribute to continuous improvement in areas that matter."

Nowadays, researchers and educators design action research projects with clear real-world goals and strategies for dissemination and implementation. This is indeed a strong engagement for teachers, as Bongcayao (2023) provides insights into the collaborative nature of school action research. He suggests that real-world engagement in collaborative action research fosters a culture of shared responsibility and collective problem-solving, aligning with the collaborative nature of the theme.

Skills Enhancement and Personal Growth

Engaging in reflective processes is closely tied to personal growth, as teachers gain insights into their practices, enhance their analytical skills, and foster a deeper understanding of their role in the educational setting. It emphasizes the professional development aspect of teachers in conducting action research, highlighting how they can enhance their skills and knowledge through engaging in systematic inquiry, as pointed out by one participant:

Informant 1: *"One of the factors that motivated me to conduct research is my personal growth, which developed my skills, expertise, and a sense of accomplishment."*

Teachers involved in action research experience enhance personal and professional growth, including developing new skills and a deeper understanding of their teaching practices. Johannesson and Olin (2023) reported that teachers' involvement in action research projects contributes to skill development, empowerment, and a heightened sense of professional efficacy.

Collaboration and Adaptability

Collaboration among teachers can be crucial for the success of the research projects. Teachers may need to work together to gather data, share resources, and provide feedback on each other's research. Moreover, adaptable teachers can respond to unexpected issues by adjusting their research plans, methodologies, or interventions. This flexibility is crucial for effective problem-solving. To wit:

Informant 2: *"This approach allows for collaboration, adaptability, and meaningful impact on the issues at hand."*

This idea is supported by Moser et al. (2017), who state that collaborative action research can lead to more impactful interventions due to broader perspectives and collective problem-solving. Moreover, adaptability allows teachers to tailor their research approaches to the specific context. It ensures that the action research is relevant to the school environment's unique needs, challenges, and opportunities (Wasmuth & Pedder, 2017).

Improving Educational Practice

Teachers often conduct action research to address specific challenges or gaps in their teaching methodologies. It could involve exploring new instructional techniques, incorporating technology, adapting curriculum materials, or refining assessment methods. The statement below emphasizes the commitment to providing high-quality education and fostering better learning outcomes for students:

Informant 5: *"For me, that motivates me to conduct action research; I know that action research is a process for improving educational practice. Its methods involve action, evaluation, and reflection, and it is a process to gather evidence to implement change in practices."*

Action research is not merely a process of inquiry but a transformative journey for educators committed to enhancing their teaching and educational practices. Through collaborative inquiry, teachers engage in a cyclical process of planning, acting, observing, and reflecting. Dana and Hoppey (2019) supported this iterative approach, allowing for the refinement and evolution of instructional strategies, ultimately fostering a culture of continuous improvement in educational practice. In this way, action research becomes a dynamic force driving positive change within classrooms and school communities.

3.2 Teachers' Challenges and Difficulties

There were 12 initial themes under Teachers' Challenges and Difficulties. From this, there were five (5) relevant themes generated: (1) Time Constraints, (2) Resistance to Change, (3) Sustainability Challenges, (4) Negative Perceptions and Attitudes, and (5) Lack of Conceptual Knowledge.

Time Constraint

Action research involves a systematic inquiry process that demands time and effort to plan, implement, reflect, and analyze results. Teachers often juggle various responsibilities, including classroom teaching, administrative duties, and personal commitments. Balancing these demands while effectively conducting action research can be challenging. It is evident in this response:

Informant 2: *"For me, in time constraints, conducting action research requires a significant time investment, which can be challenging for educators and professionals with busy schedules."*

Informant 1: *"Especially time constraints (we often have busy schedules) on how to balance our roles (as a teacher and a researcher)."*

Most participants affirmed the previously mentioned themes, expressing their willingness to engage in action research. Consistently, participants highlighted the significance of time and heavy workloads as critical challenges in conducting action research. Collectively, they perceived research as a challenging endeavor. It aligns with Biruk's (2015) assertion that most teachers avoid undertaking action research due to time scarcity, a lack of research background, and insufficient experience. Despite the valuable role of action research in enhancing teachers' practices and addressing challenges in the teaching-learning process, teachers refrain from participating due to the mentioned issues.

Resistance to Change

Resistance to change is a common phenomenon observed in various organizational contexts, and educational settings are no exception. When teachers engage in action research involving reflective and transformative practices, they may encounter resistance from various stakeholders, including colleagues, administrators, or themselves. The statement below raises concerns about teachers' challenges:

Informant 2: *"Another thing is resistance to change; implementing interventions might face resistance from stakeholders, especially if changes disrupt established routines or norms."*

Teachers might resist change if they perceive it as a loss of control over their classroom, curriculum, or teaching methods. A study by Morales (2016) found that the support and guidance provided by school leaders play a pivotal role. If administrators actively endorse and participate in action research, it can foster a more positive attitude among teachers. Ulla's study (2017) supports the idea that involving teachers in the decision-making process and actively seeking their input can foster a sense of ownership and reduce resistance.

Sustainability Challenges

Teachers delve into the difficulties they encounter in maintaining and embedding positive changes resulting from their research initiatives over the long term. In addition, overcoming sustainability challenges may require additional resources regarding time and funding. Limited resources can constrain the ability to address these challenges adequately, as noted by another participant:

Informant 4: *"Maintaining the long-term viability of positive changes resulting from interventions poses a challenge in ensuring sustainability."*

The continuous effort required to overcome sustainability challenges can contribute to burnout and fatigue among researchers. It may impact the overall well-being of individuals involved in the research process. However, Caingcoy (2020) emphasized that developing a well-thought-out research plan that includes strategies for addressing sustainability challenges and its implementation should be flexible enough to adapt to unforeseen obstacles.

Negative Perceptions and Attitudes

This theme explores the challenges and difficulties teachers may face due to unfavorable attitudes or perceptions toward the concept of action research. It involves understanding how teachers' preconceived notions, skepticism, or resistance towards action research which gives impact to their motivation, engagement, and overall experience with the research process, which is evident in this statement:

Informant 5: *"Being a teacher has many responsibilities to his students and workplace. The challenges and difficulties in conducting action research include negative perceptions [...]."*

Insufficient training and inadequate resources for implementing action research can contribute to negative perceptions among teachers. Negative perceptions and attitudes among teachers can significantly impact their engagement in action research, hindering the successful implementation and outcomes of such endeavors. It is supported by Denessen et al. (2020), wherein they had identified institutional barriers that contribute to negative perceptions. These barriers may include limited support from school administrators, lack of resources, and insufficient time for teachers to engage in meaningful action research projects.

Lack of Conceptual Knowledge

This theme reflects the participants' struggles with understanding the foundational concepts, frameworks, and methodologies essential for conducting meaningful research. Many teachers reported lacking the theoretical grounding necessary to design, execute, and analyze their research projects effectively. This issue often stems from insufficient exposure to research training or limited opportunities to apply research skills in real-world contexts. It is evident in this response:

Informant 5: *"...lack of conceptual knowledge and unresponsive nature to critiques, lack of time and resources."*

Informant 2: *"I do not have a solid grasp of research methodologies, which makes the whole process seem daunting."*

The participants expressed concerns about their limited understanding of research methodologies, making conducting action research challenging. Teachers feel ill-prepared to engage in research because of insufficient knowledge of key concepts such as research design, sampling, and data analysis. This theme indicates the need for more structured and practical research training for teachers, focusing on developing their conceptual understanding. This challenge is supported by the study of Landicho (2020), which highlights that inadequate research preparation is standard among educators. Gebeyew (2017) further points out that teachers' lack of research skills often leads to reluctance to conduct research, as they feel overwhelmed by the complexity of research methodologies.

3.3 Informants' Perspectives on the Conduct of School-based Action Research

There were nine (9) initial themes under informants' perspectives on the conduct of school-based action research. From this, there were five (5) relevant themes generated: (1) Skill Development and Enhancement; (2) Reflection and Self-Improvement; (3) Exploration and Knowledge Acquisition; (4) Impact on Teaching and learning; and (5) Professional Development.

Skill Development and Enhancement

Skill Development and Enhancement emerged as a significant theme in the participants' perspectives on the conduct of school-based action research. This theme reflects how engaging in action research helps teachers develop and improve their professional skills. It is exemplified in the excerpt below:

Informant 2: *"By conducting school-based action research and documenting my findings in well-structured reports, I not only improve my writing skills..."*

Teachers reported that action research provided opportunities to refine their research abilities, improve their problem-solving skills, and enhance their pedagogical practices. By systematically addressing issues in their classrooms through research, educators were able to cultivate critical thinking, analytical, and reflective skills, which are essential for both professional growth and improving student outcomes. The Basic Education Research Agenda (2015) highlights the importance of research in building teachers' capacities to innovate and improve educational practices. Similarly, Johannesson (2020) emphasizes that action research is a form of professional learning that directly enhances teaching competencies. Involving teachers in an inquiry-based process fosters the development of practical and theoretical skills that directly apply to classroom settings.

Reflection and Self-Improvement

Teachers used action research to engage in deep reflection about their teaching practices, identifying areas for self-improvement. Through action research, educators became more self-aware of their instructional methods,

classroom challenges, and the impact of their decisions on student learning. This reflection often led to meaningful changes in their approaches, fostering both personal and professional growth, as mentioned here:

Informant 3: "*... an opportunity to reflect on the action taken to familiarize oneself with the initial prompt of creating school-based action research.*"

Reflective practice enables teachers to align their values and goals with the broader educational objectives, fostering a culture of self-improvement within the school community. In the Philippines, the Department of Education (2015) promotes reflective teaching as part of the Philippine Professional Standards for Teachers (PPST), emphasizing its role in improving student learning outcomes through continuous teacher self-assessment and improvement.

Exploration and Knowledge Acquisition

Teachers viewed action research as an opportunity to explore new teaching strategies, pedagogical approaches, and educational tools. Through this exploration process, they acquired new knowledge and insights that enriched their understanding of educational practices and enhanced their effectiveness in the classroom. It can be seen in the response:

Informant 5: "*...explore what others are doing in that field, and experiment with practice in a controlled fashion.*"

The Department of Education has encouraged school-based action research for professional development and knowledge acquisition in the Philippines. Through DepEd's Research Management Guidelines, teachers can explore different aspects of teaching and learning, gather relevant data, and use that information to improve classroom practices. Furthermore, McNiff and Whitehead (2017) argue that exploration is a key component of action research because it allows teachers to experiment with different teaching strategies, gather data on their effectiveness, and refine their approaches based on evidence.

Impact on Teaching and Learning

Action research directly influences teachers' instructional methods and students' learning experiences. Participants highlighted how the research process helped them identify areas for pedagogical improvement, implement innovative strategies, and assess the effectiveness of their teaching in real-time, resulting in enhanced learning outcomes for their students. It is reflected in the response:

Informant 5: "*...practical training supports participants in improving teaching and learning through classroom-based research.*"

Action research is considered a powerful tool for improving classroom practice. It gives teachers the means to reflect on their instructional approaches, make informed adjustments critically, and directly measure the impact of those changes on student performance. This process enables educators to bridge the gap between theory and practice, leading to more personalized and effective teaching strategies. Furthermore, Manfra (2019) emphasizes that action research's impact on teaching extends beyond individual teacher development. When conducted collaboratively, action research fosters a community of practice where educators share insights, collaborate on new methods, and contribute to the collective improvement of teaching standards within the school.

Professional Development

Teachers viewed action research as a means of refining their skills, staying updated with current educational trends, and enhancing their overall effectiveness in the classroom. This theme highlights the role of action research as a crucial tool for continuous teacher growth and learning, as pointed out by one participant:

Informant 4: "*With constant activities, workshops, and write shops given to us during seminars and pieces of training for making action research from inset and SLACs, I was able to determine and improve my skills on the processes in conducting the action research.*"

Teachers who collaborate on research improve individually and contribute to the professional learning community within their schools. This collaborative effort leads to shared knowledge, collective problem-solving, and a unified vision for improving educational practices. As noted by Ocal (2017), action research supports teachers in becoming reflective practitioners, which is essential for professional development. By engaging in this research, educators can identify challenges, implement solutions, and evaluate the outcomes, fostering an ongoing cycle of learning and improvement. This process deepens teachers' pedagogical knowledge and builds their confidence in experimenting with new approaches.

4.0 Conclusion

In conclusion, the study reveals significant insights into teachers' motivations, challenges, and difficulties in action research. The results highlight the comprehensive nature of action research as both a catalyst for professional growth and a challenging endeavor. Teachers are primarily motivated by the desire for positive change, real-world engagement, and skill enhancement. This intrinsic motivation aligns with literature suggesting that educators engaged in research are likely to experience a sense of empowerment and professional satisfaction. However, despite these motivating factors, teachers face significant challenges, such as time constraints, resistance to change, and a lack of conceptual knowledge. These challenges hinder the effective implementation and sustainability of action research.

Moreover, the results highlight that while action research holds substantial potential for improving teaching practices and fostering professional development, its success is contingent upon addressing the identified challenges. Teachers' engagement in action research offers opportunities for skill development, reflection, and exploration of new pedagogical strategies. However, overcoming barriers like time limitations and resistance to change is essential for maximizing the benefits of action research. It is crucial to provide ongoing professional development, allocate adequate time and resources, and foster a supportive environment that values research as a tool for continuous improvement. Policymakers and the school research committee at Isulan National High School can establish policies requiring action research training as part of new teacher orientation or in-service training programs. These policies could also include mentorship programs and pairing experienced teacher-researchers with novices to build a stronger research culture. Future research may explore the long-term impact of action research on teaching practices and the effectiveness of intervention programs designed to support teachers in action research.

5.0 Contributions of Authors

The sole author reviewed the research findings, wrote the manuscript, and analyzed the data to ensure the accuracy and reliability of the final paper.

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There is no conflict of interest.

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Pedagogical, Research, and Professional Development Training Needs of Allied Health Sciences Faculty

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Abstract. Assessment of the training needs of faculty members is an important step in ensuring that faculty development programs and activities will be aligned with the faculty's personal, communal, and cultural needs. This study assessed the training needs of the Bachelor of Science in Nursing, Medical Laboratory Sciences, and Pharmacy program faculty members of a Higher Education Institution in the northern part of the Philippines. The results of this study served as a basis for identifying seminars/training specifically tailored to the faculty's needs. This descriptive quantitative research was conducted among 42 full-time and part-time faculty members via an online survey using a structured questionnaire designed by the university research staff. The results showed that all allied health sciences faculty members have training needs or interests in pedagogy, research, and other professional attributes. Specific training topics on pedagogy include assessment and evaluation of learners, developing learners' critical thinking skills, and outcomes-based education. Training topics in research and innovation include analysis and interpretation of data, research mentoring, and the use of digital tools for research. Finally, training topics in other areas of professional attributes include work and personal life balance, stress management, health and wellness, and strategic planning.

Keywords: Allied health sciences faculty; Professional attributes; Research capability; Teaching skills; Training needs assessment.

1.0 Introduction

Higher Education Institutions (HEI) primordial aim is to provide their clients with the highest quality of education. To do so, HEIs must comply with set standards measuring their performance (Estacio et al., 2020). Faculty members play a vital role in ensuring quality education for students (Abouelenein, 2016; Boadu & Acquah, 2013). Faculty members are, therefore, expected to have mastery or competencies along the threefold function of HEIs: instruction, research, and community engagement. To ensure that faculty members are competent in these areas, educational institutions worldwide must pay great attention to faculty preparation and professional development. HEIs must assist faculty members in performing their responsibilities successfully by offering programs to improve faculty performance and create the proper working environment. continually (Abouelenein, 2016; Estacio et al., 2020).

An understanding of the individual professional development needs of the target faculty is required to plan current and relevant faculty development programs (Abdelkreem et al., 2020; Estacio et al., 2020). Efforts to

evaluate the needs of college-level faculty must be ongoing to ensure that gaps in their competency levels can be quickly found and correctly filled (Boadu & Acquah, 2013; Gao et al., 2022). Implementing appropriate training and seminars has been found to improve faculty competencies effectively. Moreover, the effectiveness of faculty development programs relies significantly on their relevance to the faculty's personal, communal, and cultural needs (Boadu & Acquah, 2013; Mahmud et al., 2019). Hence, the assessment of faculty members' training needs and interests is vital to implementing any faculty development program or activity.

As with any other field of discipline, the allied health sciences field is constantly evolving in response to continuous changes in the educational system, health care system, health research, and other factors that determine the needed competencies of health professionals (Abdelkreem et al., 2020). Health professionals have a wide area of expertise, especially in clinical, community, or occupational settings, but these professionals have limited training in teaching as it is not the focus of their discipline (Abdelkreem et al., 2020). Moreover, with the recent COVID-19 pandemic, allied health sciences education needed to adapt dramatically to a blended mode of lesson content delivery (Debnath et al., 2021).

The University of Saint Louis has also recently adopted blended learning. It is interesting to know the faculty's pedagogical needs, research and innovation needs, and other professional needs. While previous studies have explored faculty development needs in various disciplines, a dearth of research explicitly focuses on the unique needs of allied health sciences faculty, particularly in the context of recent educational shifts, such as the adoption of blended learning. Moreover, there is a need for a more in-depth analysis of how these needs align with the evolving landscape of healthcare and education. Thus, this study was conducted to assess the training needs of the School of Health and Allied Sciences faculty. The results of this study served as a basis for identifying seminars/training specifically tailored to the faculty's needs.

2.0 Methodology

2.1 Research Design

The study used the descriptive quantitative design with an online survey as the primary data-gathering method.

2.2 Research Locale

The research was conducted in a higher education institution located in Cagayan Valley, Philippines, particularly in the department offering allied health sciences programs.

2.3 Research Participants

The respondents of the study were the full-time and part-time faculty members of the university for the school year 2022-2023 who teach in the allied health sciences programs: Bachelor of Science in Nursing, Bachelor of Science in Medical Technology, and Bachelor of Science in Pharmacy.

2.4 Research Instrument

Data about training needs in the areas of pedagogy, research, and innovation and other relevant professional attributes/ skills were gathered using a structured questionnaire answerable using the 4-point Likert Scale (4-Very Important, 3-Important, 2-Somewhat Important, 1-Not at all important). The questionnaire consisted of 14 items regarding pedagogical needs, 8 items regarding research and innovation needs, and 9 items regarding other needs. The University Research and Development Center developed the questionnaire and validated by the University Research Council through face validation.

2.5 Data Gathering Procedure

An online survey was done to gather data. Approval from the university's administration was obtained before data collection. Data collection was done at the beginning of the school year 2022-2023 as this will serve as a basis for the professional development plan for the allied health sciences faculty. Mean was used to assess the needs of the faculty.

2.6 Ethical Considerations

The researchers adhered to ethical guidelines to ensure the ethical soundness of this research. They ensured the anonymity and confidentiality of the respondents, getting only the needed information for the profile. Informed

consent was obtained from the respondents; this was included in the first part of the online survey, so if they do not wish to participate, they will not proceed to the questionnaire per se. All information presented was generalized per the allied health sciences program to prevent the identification of the respondents.

3.0 Results and Discussion

As can be gleaned from Table 1, most allied health sciences faculty have been employed for less than 4 years and belong to the assistant instructor academic rank. This implies that most allied health sciences faculty members are at the novice level in terms of professional experience in teaching. Moreover, the majority of the faculty have full-time status and are either master's degree holders, have earned units in doctorate degrees, or are holders of a doctorate.

Table 1. *Profile of Respondents*

Variable	Frequency	Percent
Gender		
Male	15	35.7
Female	27	64.2
No. of Years in USL		
< 1 year	24	57.1
1- 3 years	11	26.1
4 - 6 years	4	9.52
≥ 10 years	3	7.14
Academic Rank		
Asst. Instructor	39	92.8
Instructor	3	7.14
Employment Status		
Full-time	32	76.1
Part-time	10	23.8
Educational Attainment		
Bachelor's Degree	9	21.4
With Master's Units	12	28.5
Master's Degree	15	35.7
With Doctoral Units	5	11.9
Doctorate Degree	1	2.38

Faculty members teaching allied health sciences programs in the Philippines typically have a blend of clinical and teaching experience, with a significant portion having 1-5 years of clinical experience and 6-10 years of teaching experience (Appiah, 2020) . Their teaching experience is a strong predictor of the perceived quality of the nursing education program, highlighting the importance of employing experienced educators for continuous improvement (Armecin & Amparado, 2015).

Table 2 shows that the training needs of allied health sciences faculty in pedagogy cover all areas being assessed. The allied health sciences faculty, in this case, are composed of allied health professionals such as licensed nurses, medical technologists, and pharmacists. Pedagogy is not within the scope of their practice and professional preparation, which would explain their training needs in pedagogy.

Table 2. *Training Needs in Pedagogy*

Pedagogical Needs	Mean	Interpretation
Innovative classroom teaching approaches	3.79	Very Important
Using technology resources/ tools to enhance teaching/learning	3.74	Very Important
Evaluation/assessment of learners	3.86	Very Important
Providing constructive feedback to learners	3.64	Very Important
Stimulating lifelong learning	3.71	Very Important
Use of LMS and other online learning platforms	3.43	Important
Test construction and evaluation	3.67	Very Important
Syllabus development	3.62	Very Important
Designing course learning modules	3.57	Very Important
Developing learners' critical thinking skills	3.83	Very Important
Outcome-based education	3.81	Very Important
Classroom management	3.67	Very Important
Designing service learning/experiential learning activities	3.71	Very Important
Effective communication techniques	3.74	Very Important

Priority is given to training activities that will enable the faculty to implement teaching-learning activities/ strategies and assessments/ evaluations that will help develop students' critical thinking skills. The development of critical thinking among students is considered a significant outcome for Higher Education Institutions (Cone et al., 2016; Gao et al., 2022; Reale et al., 2018). Critical thinking is an essential skill that allied health students must develop, as it will determine their capacity to make effective clinical decisions in their future practice. (Lee et al., 2017; Liu & Pásztor, 2022). The type of teaching-learning strategies implemented has been found to affect the development of critical thinking among students directly (Abrami et al., 2015; Liu & Pásztor, 2022). Teaching and learning strategies in allied health programs should, therefore, be designed to allow students to develop and apply critical thinking skills (Lee et al., 2017). Faculty are also faced with the additional challenge of delivering lesson content in a blended learning environment, which involves both online and limited face-to-face modalities. Online learning can be advantageous in fostering the development of critical thinking, but its implementation poses a significant challenge to educators (Gao et al., 2022; Tathahira, 2020). Hence, there is a need for relevant training in this area.

Table 3 shows that the allied health sciences faculty found all areas of research and innovation significant for training. The generation and dissemination of knowledge is one of the threefold functions of Higher Education Institutions (Rogayan & Corpuz, 2022). This may be done through the production of research or other creative/ innovative works. To produce quality research and creative outputs, faculty members must be well-trained in the different processes involved in research. As seen in the table, the training needs of allied health sciences faculty in research and innovation with the highest rank are those within the design and planning, analytic, and dissemination phases of the research process (Muiderman et al., 2022). The University Research and Innovation Office has implemented a research capability-building program since the school year 2020-2021, which mainly focused on the conceptual phase of the research process. Thus, this may explain the identified priority training needs for this school year. The allied health faculty is also interested in training students on using digital tools in research.

Table 3. *Training Needs in Research and Innovation*

Research and Innovation Needs	Mean	Interpretation
Research Mentoring	3.69	Very Important
Proposal writing in discipline research	3.67	Very Important
Conducting literature search	3.64	Very Important
Developing research designs and methods	3.69	Very Important
Data analysis and interpretation	3.74	Very Important
Writing a research manuscript	3.69	Very Important
Publishing in ISI/Scopus index journals	3.55	Very Important
Using Digital Tools in Research	3.69	Very Important

As can be gleaned from Table 4, allied health faculty members ranked health and wellness, balancing work and personal responsibilities, and strategic planning as their priority training needs along professional areas/ attributes outside pedagogy and research. Professional attributes are characteristics/ skills that are essential to educators to ensure preparedness for the demands, challenges, and obligations of teaching (Rusilowati & Wahyudi, 2020).

Table 4. *Training Needs in Other Professional Attributes*

Other Needs	Mean	Interpretation
Balancing work and personal responsibilities	3.86	Very Important
Stress Management	3.79	Very Important
Time Management	3.79	Very Important
Conflict Management	3.74	Very Important
Organizational Abilities	3.69	Very Important
Strategic Planning	3.86	Very Important
Policy Development	3.74	Very Important
Risk Management	3.71	Very Important
Health and Wellness	3.86	Very Important

These areas are equally important as technical skills like pedagogy and research. As allied health professionals, allied health faculty may have given the most significant importance in ensuring that they meet health and wellness needs and balancing work and personal responsibilities to carry out their functions as educators

effectively. Moreover, another area of highest importance that has been identified is strategic planning. Strategic planning is important in ensuring the quality of education offered by HEIs (Priyambodo & Hasanah, 2021). Therefore, this must be an area that faculty are skilled in or at least aware of to contribute to the quality of the university's education.

4.0 Conclusion

Based on this study's results, It can be concluded that allied health faculty members require relevant training to improve their pedagogical skills, research capability, and personal and professional training. The training areas of the highest importance, as assessed by the faculty, are learner evaluation and assessment, analysis and interpretation of research data, personal health and wellness, and balancing work and personal responsibilities. A comprehensive faculty development focusing on the identified priority training areas should, therefore, be developed to improve the capabilities of allied health sciences faculty members in research, pedagogy, and personal professional development.

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JPS, DVA - editing, writing, supervising,

JPS - data analysis

DVA- finalization of the manuscript for publications

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7.0 Conflict of Interests

The authors do not have any form of conflict of interest in the conduct of this study.

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Development of Student Government E-Voting Application

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Abstract. This study underscores the transformative potential of an e-voting mobile application in enhancing the election process at NORSU-Guihulngan Campus by improving efficiency, reliability, and transparency. This innovative solution ensures a streamlined, fair, and secure electoral process by addressing the limitations of traditional manual voting systems. The descriptive-developmental method employed included planning, prototyping, testing, and data gathering. A survey was distributed to 106 respondents, including students and IT experts, to evaluate the manual voting system and assess the e-voting application's functionality. Pilot tests were conducted with criteria focusing on user interface, security, accessibility, transparency, and reliability, supported by statistical analysis. The e-voting application exhibited exceptional performance across all evaluated aspects. The user interface and security scored an average of 4.39, reflecting excellent design and robust data protection. Accessibility achieved the highest rating at 4.46, ensuring seamless usability for diverse users. Transparency and reliability were rated at 4.31 and 4.41, respectively, underscoring the system's openness and consistent functionality. Overall, the application achieved a total average rating of 4.39, confirming its effectiveness as a voting solution. The application's usefulness was evaluated across six key features: accessibility, time and cost efficiency, real-time results, enhanced accuracy, increased security, and audit trail transparency. Accessibility and real-time results received scores of 3.50, while time and cost efficiency achieved 3.60. Enhanced accuracy and security also scored 3.50, minimizing errors and fostering trust. Audit trail transparency, rated at 3.40, emphasized the system's accountability. These findings validate the application's ability to revolutionize student elections at NORSU-Guihulngan and provide a scalable model for similar institutional contexts. The study highlights the importance of integrating modern technology into election systems, paving the way for broader adoption in academic and institutional settings to ensure reliable and transparent processes.

Keywords: E-voting; Innovation; Student government; Technology.

1.0 Introduction

Traditional election processes, particularly in educational institutions, often struggle to meet the dynamic needs of modern voters. As a demographic, students had grown accustomed to digital interactions, which had become central to their daily lives. Despite the increasing shift towards digital solutions, many educational institutions relied on outdated manual voting systems for student government elections. This practice proved inefficient, prone to errors and failed to account for the diverse needs of the student body. At Negros Oriental State University - Guihulngan Campus (NORSU-Guihulngan), the existing manual voting system for student elections exemplified these challenges, resulting in administrative inefficiencies, low voter turnout, and a lack of inclusivity. This study aimed to address these challenges by proposing an innovative e-voting application explicitly tailored

for NORSU-Guihulngan. By introducing a secure, user-friendly, and transparent digital voting platform, the study sought to modernize and enhance the student election process, ultimately improving voter engagement, administrative efficiency, and the democratic integrity of the institution's governance.

Voting, as a cornerstone of democracy, was integral to the functioning of any democratic society. In the context of the Philippines, the importance of active participation in governance was enshrined in Article V of the Philippine Constitution, which emphasized the right to vote as a critical element of citizenship. This right was mirrored in educational institutions, where student government elections were vital for fostering democratic values, leadership skills, and civic engagement among students. Student government elections replicated the democratic processes seen in national elections and were vital to instilling the values of active citizenship. However, using traditional manual voting systems in many institutions, including NORSU-Guihulngan, presented significant drawbacks. In these traditional systems, voters were often required to cast ballots physically, and volunteers manually tallied election results. This process was time-consuming, prone to errors, and difficult to manage in large student populations. Additionally, manual voting systems often faced challenges such as voter disenfranchisement, particularly among students who faced logistical barriers such as limited time or mobility issues. These limitations had contributed to low voter turnout and diminished participation in student elections, further undermining the democratic process.

In contrast, the advent of electronic voting systems (e-voting) has addressed many inefficiencies inherent in traditional election processes. Research conducted by Smith and Clark (2005) indicated that e-voting systems could significantly reduce costs, minimize errors, improve accessibility, and increase voter engagement. Despite these advantages, adopting e-voting solutions has been slow in many educational institutions, and NORSU-Guihulngan was no exception. As a result, the benefits of modern electoral technology remained largely untapped, leaving the institution's electoral process outdated and inefficient. While other educational institutions that had embraced e-voting platforms reported enhanced participation rates, streamlined election procedures, and improved voter experiences, NORSU-Guihulngan continued to rely on traditional methods that failed to capitalize on the potential of modern technology. This gap in technological adoption highlighted the need for a more forward-thinking approach to student elections at NORSU-Guihulngan.

Several critical shortcomings, including delays in vote tallying, administrative inefficiencies, and limited student accessibility characterized the traditional manual voting system employed at NORSU-Guihulngan. These issues contributed to lower voter turnout, fewer candidates running for student government positions, and administrative difficulties, which undermined the democratic nature of student governance. Furthermore, the current system struggled to keep up with the evolving technological expectations of the student body, which had become increasingly accustomed to digital interfaces and online interactions. The limitations of the manual voting system at NORSU-Guihulngan necessitated a comprehensive solution that addressed the institution's technical and contextual barriers. While e-voting systems implemented at other universities had demonstrated significant benefits, such as automation, real-time result generation, and enhanced transparency, they also faced challenges, including ensuring data security and requiring stable internet connectivity. This study aimed to design an e-voting application that was secure, user-friendly, and contextually appropriate for NORSU-Guihulngan, addressing both the technical and administrative barriers that had hindered progress thus far.

The main objective of this study was to develop and evaluate a secure, user-friendly, and transparent e-voting application that would replace the existing manual voting system at NORSU-Guihulngan. Specifically, the study aimed to design a customized e-voting platform that addressed the unique needs and challenges of NORSU-Guihulngan students and administrators. The application was to incorporate features such as secure voter authentication, real-time result generation, and enhanced data transparency. It also sought to evaluate the effectiveness of the proposed e-voting application in terms of accessibility, user experience, and administrative efficiency, with feedback from students and administrators regarding the ease of use, security features, and the overall impact on voter engagement. The study aimed to compare the e-voting system with the existing manual voting system regarding efficiency, accuracy, and voter turnout, explicitly identifying the gaps the e-voting platform addressed. Finally, the study provided recommendations for further improvement and possible expansion of the e-voting system to other campuses or educational institutions, offering a model for others seeking to modernize their electoral processes.

This study held significant value in the context of NORSU-Guihulngan and student governance in educational institutions. First, it aimed to improve the efficiency and accuracy of the election process, providing a reliable platform for students to express their political preferences. By eliminating the administrative inefficiencies and errors associated with manual voting, the e-voting system could ensure that election results are accurate, timely, and transparent. Furthermore, by offering a secure, digital platform, this study aimed to foster greater inclusivity, enabling more students to participate in the electoral process, regardless of logistical barriers such as time constraints or physical limitations. The proposed e-voting system would also improve the transparency of the electoral process, providing students with confidence in the fairness and integrity of the election results. Finally, the proposed e-voting platform at NORSU-Guihulngan would serve as a model for other institutions seeking to modernize their electoral processes. As digital solutions became increasingly integral to governance, this study had the potential to pave the way for widespread adoption of e-voting systems across the Philippines, enhancing democratic engagement in educational settings.

The proposed solution for NORSU-Guihulngan was the development of an Android-based e-voting application that incorporated a range of features designed to overcome the shortcomings of the existing manual voting system. Key features of the proposed e-voting platform included secure voter authentication, real-time vote tallying, a user-friendly interface, data transparency, and offline functionality. The application was to ensure that only authorized students could cast their votes by incorporating secure login mechanisms, such as two-factor authentication or biometric verification. It was also designed to allow for automatic vote tallying, providing instant feedback and ensuring that results were available immediately after the election period ended. The app was to be designed with a simple, intuitive interface that made it easy for students to navigate and vote quickly, reducing barriers to participation. Additionally, the application would offer real-time updates on voter participation and election results, fostering greater trust in the system. To address potential issues with internet connectivity, the application was designed to allow for offline voting, with votes being synchronized once an internet connection was restored.

Adopting an e-voting system at NORSU-Guihulngan offered a transformative solution to the challenges the current manual voting process faces. By leveraging the benefits of digital technology, the proposed e-voting application promised to enhance the efficiency, accuracy, and inclusivity of student elections, fostering greater democratic engagement within the campus community. Through this study, NORSU-Guihulngan served as a model for other educational institutions seeking to modernize their electoral processes, bridging the gap between traditional practices and innovation potential.

2.0 Methodology

2.1 Research Design

This research used a descriptive-developmental method. This method works primarily on describing, comparing, analyzing, and interpreting existing data (Gillaco, 2014). The developmental method is a body of research literature that pertains directly to instructional development, which means an output will be developed after conducting this research. This approach combines descriptive methods, which aim to analyze and describe the current state or process (e.g., manual voting inefficiencies), with developmental research, which focuses on designing, developing, and testing a new system (e.g., the e-voting application for the NORSU-Guihulngan Student Government).

2.2 Research Locale

The study was conducted at Negros Oriental State University (NORSU) - Guihulngan Campus, Guihulngan City, Negros Oriental, Philippines. NORSU-Guihulngan Campus is committed to providing excellent instruction, conducting relevant and responsive research and extension services, and maintaining quality assurance through the dedication of its highly competent and motivated workforce. The study focused on the campus as the research environment to analyze the implementation of an e-voting application for the NORSU-Guihulngan Student Government election, addressing challenges in the traditional manual voting system. The strategic location and institutional mandate made it an ideal setting for conducting this study, emphasizing the relevance of technology-driven innovations in improving electoral processes.

2.3 Research Participants

The respondents of the study consisted of 106 participants from Negros Oriental State University – Guihulngan Campus, who contributed by answering a Google Forms questionnaire. A stratified random sampling technique was employed to ensure a representative distribution of respondents across different student groups, such as year level, academic programs, and involvement in student government activities. This approach allowed for a more comprehensive understanding of the perspectives and experiences of various subgroups within the campus. The respondents were carefully selected based on their familiarity with the current manual voting system for student government elections, as they were deemed knowledgeable about the issues and challenges encountered with the existing process. Their insights were crucial in the evaluation process, as they directly assessed the inefficiencies of the manual system and provided valuable suggestions for potential improvements. The responses gathered from this diverse group of respondents formed the foundation for the analysis and subsequent recommendations to enhance the electoral process and inform the development and implementation of the proposed e-voting application.

2.4 Research Instrument

The data-gathering instrument was a modified tool designed specifically for this study, using Google Forms to distribute survey and interview questionnaires to respondents. The instrument aimed to collect insights regarding the potential implementation of the e-voting application at NORSU-Guihulngan Campus, focusing on its functionality, user interface, security, accessibility, transparency, and reliability. For validity, the researchers used a validation tool with a rating scale of 1 to 5, where 5 represented "very much valid" and 1 was "not valid." Expert validation yielded a score of 4.67, confirming the instrument's high validity. A survey was conducted for reliability testing with 30 respondents aged 15-30. The Cronbach's Alpha test was applied to the Likert scale survey, yielding a 1.21 score indicating excellent reliability. Pilot tests were also conducted to refine the instrument based on participant feedback, ensuring it effectively captured relevant data to assess the e-voting system's potential to improve the electoral process.

2.5 Data Gathering Procedure

The data-gathering process involved surveying CS/IT experts, faculty members, and students currently studying and teaching at the Negros Oriental State University-Guihulngan Campus. The survey aimed to demonstrate how students and administrators would interact with and utilize the proposed e-voting system, ensuring a comprehensive understanding of its functionality and usability. To minimize distractions and optimize data collection, the researcher employed a time-allotted scheme for administering the questionnaire. This approach ensured respondents had sufficient time to provide thoughtful and accurate responses. Once the questionnaires were completed, they were immediately retrieved to maintain the integrity of the data. After collection, the responses were tallied, calculated, and analyzed using appropriate statistical tools. This systematic approach allowed the researcher to derive meaningful insights, ensuring that the data effectively informed the evaluation of the e-voting system's impact and feasibility.

2.6 Data Analysis

The collected data from the responses to the Google Forms questionnaire, completed by students of Negros Oriental State University-Guihulngan Campus, were meticulously analyzed using a statistical software package. Cronbach's Alpha was employed to ensure the reliability of the research instruments, and the results confirmed the instrument's validity and dependability. For descriptive analysis, frequency counts and percentages were utilized to evaluate the existing manual voting process for student government elections and identify the challenges students faced. These insights were a foundation for designing and developing the proposed e-voting application. The weighted mean was applied to assess the newly developed e-voting system's effectiveness. This involved calculating the weight of each category, summing all weights, multiplying each value by its respective weight, and dividing the total by the sum of weights. This method comprehensively measures the system's performance across various parameters. Standard deviation was used to analyze the homogeneity and heterogeneity of the ratings provided by IT experts, offering insights into the consistency of their assessments. Additionally, a Likert rating scale was employed to categorize and interpret the statistical results of the system's effectiveness. The findings were systematically presented in tables for clarity and ease of understanding, providing a detailed evaluation of the e-voting application's functionality, usability, and overall impact.

2.7 Ethical Considerations

Formal letters were provided to the respondents, clearly outlining the purpose and scope of the study. Respondents' participation was voluntary and free to consent or decline without any obligation. To ensure privacy, their responses were treated with the highest level of confidentiality, and their identities remained anonymous throughout the data collection, processing, and interpretation stages. After the data was analyzed and reported, the completed questionnaires were securely disposed of through shredding and incineration. Furthermore, the respondents were thoroughly informed about the study's objectives, ensuring their complete understanding and voluntary participation.

3.0 Results and Discussion

3.1 Students' Characteristics

Figure 1 shows the participation of Negros Oriental State University - Guihulngan students in the student government election. According to the results, 91.5% of the respondents said YES, while 8.5% said NO. This implies that most respondents participated in the student government election. According to Oki and Idrus (2020), schools have become a strategic position in developing democratization, especially in politics, because their political interests have emerged and are developing now.

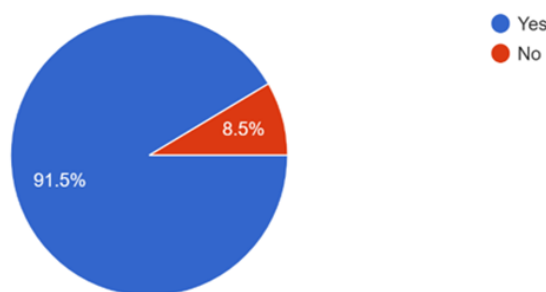


Figure 1. Participation of Students in the Student Government Election

Figure 2 shows that the current student government election at Negros Oriental State University - Guihulngan utilizes paper ballots. According to the results, 79.2% of the respondents preferred paper ballots, 16% preferred an online voting platform, and 4.7% preferred an e-voting application. This implies that most respondents favored paper ballots for the current NORSU-Guihulngan student government election. According to Herrnson (2008), electronic voting systems were developed, in part, to make voting easier and to boost voters' confidence in the election process.

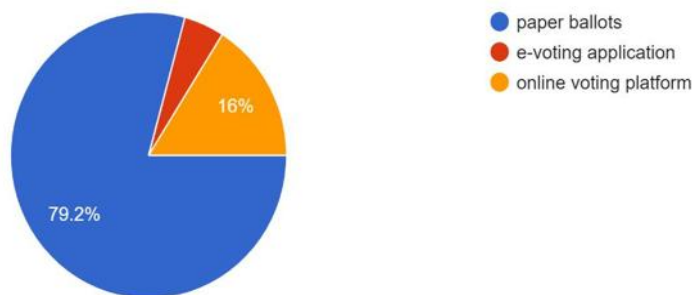


Figure 2. Current Student Government Election Utilizes Paper Ballots

Figure 3 illustrates the challenges faced by students at Negros Oriental State University - Guihulngan during the student government election. The most prominent issue was ballot confusion, which ranked first, affecting 42.5% of respondents. Security concerns came in second, reported by 22.6% of students. Lack of transparency was ranked third, cited by 17.9%, while insufficient voting stations rounded out the list at fourth place with 17%. These findings underscore the need for improvements in ballot design, security measures, transparency, and voting

infrastructure to ensure a smoother and more effective election process. But according to Fauzi and Habibi (2023), the implementation of e-voting requires supportive infrastructure, adequate public education, and a robust legal framework.

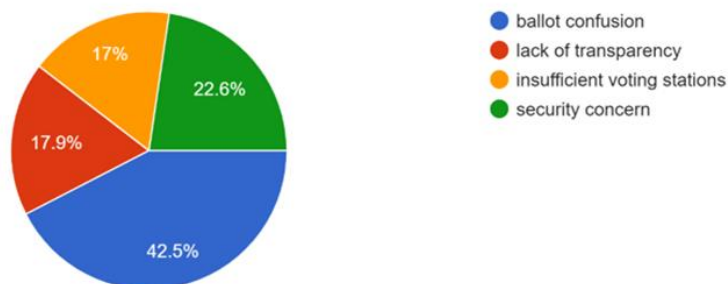


Figure 3. Problems Encountered by Students During the Student Government Election

Figure 4 highlights the rankings of the top four features of the Negros Oriental State University - Guihulngan student government e-voting application, as rated by users. E-voting can provide an efficient and cost-effective method for conducting voting procedures while encouraging the participation of specific groups, such as young or disabled voters (Gritzalis, 2002). The user-friendly interface leads the list, which secured the top spot with a preference rate of 74.5%. The application's ballot verification and auditing capabilities ranked second, garnering 72.6%. Real-time vote tallying follows at third place with 62.3%, while secure authentication methods rank fourth, receiving 58.5%. These results emphasize the importance of usability, transparency, efficiency, and security in enhancing the e-voting experience. E-voting can be an efficient and cost-effective way to conduct a voting procedure and to attract specific groups of people (e.g., young or disabled electors) to participate

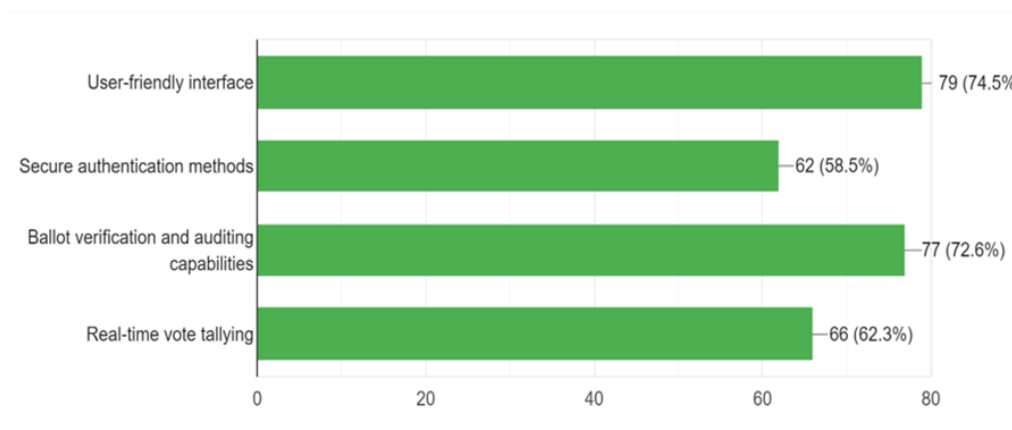


Figure 4. Ranking of the Top 4 Features or Functionalities of Student Government E-Voting Application

Figure 5 presents the results of the quality assessment of the e-voting system at Negros Oriental State University - Guihulngan, based on a Likert scale evaluation. The features assessed include the user interface, security, accessibility, transparency, and reliability. Designing an airtight and reliable e-voting system is, therefore, an excellent task, in that the system that must be developed must protect the privacy of the voter, be easily understood and used by the entire voting populace-no matter who they are or where they come from (Rogers & Kyomuhendo, 2023). The results reveal that the user interface scored highest, with most respondents rating it as "5" (excellent). Similarly, security and accessibility received strong positive feedback, with many respondents providing high ratings of "5" and "4." Transparency also performed well. However, it had slightly more mixed responses, including lower scores, indicating room for improvement. While generally well-rated, reliability displayed a small distribution of lower scores, suggesting occasional concerns about its consistency. These findings reflect the system's overall strength in usability and security but highlight further opportunities to enhance its transparency and reliability.

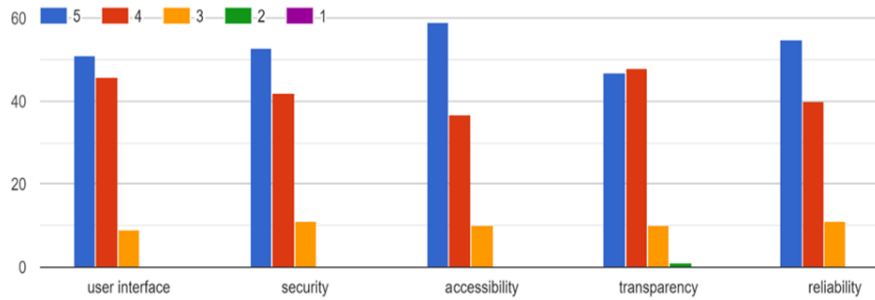


Figure 5. Results of the E-voting Quality Assessment

3.2 E-Voting Application Assessment

Table 1 presents that the user interface received an average weight of 4.39, indicating an excellent rating. The respondents highly appreciated its design and functionality. Security also received an average weight of 4.39, suggesting excellent on and data integrity. The system's accessibility, with an average weight of 4.46, was rated excellent, ensuring that users can easily navigate and interact with the application. The transparency aspect, with an average weight of 4.31, was also deemed excellent, indicating a high level of openness and clarity in the process. The system's reliability, with an average weight of 4.41, was rated as excellent, implying a consistent and dependable performance. Overall, the total average rating of 4.39 signifies that the respondents regarded the system as excellent in its various aspects, making it a highly reliable and user-friendly solution.

Table 1. Student Government E-Voting Application Assessment

Area	Mean	Interpretation
1. User interface	4.39	Excellent
2. Security	4.39	Excellent
3. Accessibility	4.46	Excellent
4. Transparency	4.31	Excellent
5. Reliability	4.41	Excellent
Overall Mean	4.39	Excellent

The evaluation results in Table 2 demonstrate the high functionality of the NORSU Guihulngan Student Government (SG) e-voting application, as assessed by IT experts. The application's performance was measured across four key parameters: suitability, accuracy, security, and compliance. Among these, suitability achieved the highest weighted mean of 3.70, indicating that the system is highly appropriate and efficient in supporting the voting process. Security followed closely with a weighted mean of 3.63, highlighting the application's robust measures to safeguard data and ensure voter confidentiality. Accuracy received a weighted mean of 3.52, reflecting its ability to record and process votes with minimal errors reliably. Similarly, compliance was rated 3.50, signifying that the application adheres to relevant standards and regulations governing e-voting systems.

Table 2. Functionality of the SG E-voting Application

Area	Mean	Interpretation
Suitability	3.70	Very Functional
Accuracy	3.52	Very Functional
Security	3.63	Very Functional
Compliance	3.50	Very Functional
Overall Mean	3.58	Very Functional

The application's overall functionality garnered a grand mean of 3.58, which falls under the verbal description "Very Functional." This result underscores the system's capability to effectively meet the technical and operational requirements of an e-voting platform. These ratings suggest that the SG e-voting application is a reliable and efficient tool for facilitating student elections. The high scores across all categories affirm the system's ability to provide essential features, such as user-friendliness, secure voting, and compliance with election protocols. The strong performance in suitability indicates that the application is well-designed to fulfill the needs of the voting process, while its security measures ensure trustworthiness and data integrity. Accuracy and compliance scores,

though slightly lower, still indicate strong performance, suggesting opportunities for further refinement to enhance these aspects. Overall, the results validate the application as a modern and effective alternative to traditional voting methods, capable of improving election efficiency and student participation.

The evaluation results in Table 3 highlight the reliability of the NORSU Guihulngan Student Government (SG) e-voting application, with a grand mean rating of 3.49, classified as "Very Reliable." The assessment measured reliability across four parameters: maturity, fault-tolerance, recoverability, and compliance, all contributing to the system's overall dependability. Recoverability achieved the highest weighted mean of 3.60 among these parameters, indicating that the application can effectively restore functionality and data integrity during system disruptions. Compliance followed with a score of 3.56, reflecting the system's firm adherence to established reliability standards and best practices. Fault tolerance, rated at 3.50, highlights the application's capability to continue functioning effectively despite minor errors or issues. Lastly, maturity, with a weighted mean of 3.31, underscores the system's stability and readiness for real-world use, suggesting slightly more room for improvement than the other parameters.

Table 3. *Reliability of the SG E-voting Application*

Area	Mean	Interpretation
Maturity	3.31	Very Reliable
Fault - tolerance	3.50	Very Reliable
Recoverability	3.60	Very Reliable
Compliance	3.56	Very Reliable
Overall Mean	3.49	Very Reliable

The results demonstrate that the SG e-voting application is a dependable platform for conducting student elections, consistently delivering stable and accurate performance. The high rating in recoverability ensures that any technical setbacks during the voting process can be swiftly addressed without compromising data or results. Similarly, fault-tolerance and compliance ratings affirm that the system is robust and aligned with reliability standards, fostering user trust. Although maturity received a slightly lower score, it still falls within the "Very Reliable" category, suggesting that the application is stable but may benefit from further optimization or updates to enhance its long-term performance. These findings validate the e-voting application's capability to provide a reliable, secure, and efficient voting experience, making it a strong alternative to traditional voting methods. Its dependability instills confidence in administrators and voters, ensuring smooth and credible election processes.

The evaluation results presented in Table 4 assess the usability of the NORSU Guihulngan Student Government (SG) e-voting application, with an overall grand mean rating of 3.61, classified as "Very Usable." This suggests that the application provides an intuitive and user-friendly experience, making it easy for students to interact with the system during the election process. The parameters assessed include understandability, learnability, operability, and compliance, all contributing to the system's overall usability. Understandability received the highest weighted mean of 3.83, indicating that users find the application's features and processes easy to comprehend. This suggests that the interface and instructions are straightforward, reducing the likelihood of confusion or mistakes. Operability, with a rating of 3.60, reflects how smoothly users can interact with the application, suggesting that it is functional and straightforward. Learnability, which scored 3.50, indicates that users can quickly grasp how to use the system, although some initial learning or guidance may be required. Lastly, compliance, rated at 3.51, reflects how well the application meets usability standards, ensuring it adheres to best practices for creating accessible and user-friendly systems.

Table 4. *Usability of the SG E-voting Application*

Area	Mean	Interpretation
Understandability	3.83	Very Usable
Learnability	3.50	Very Usable
Operability	3.60	Very Usable
Compliance	3.51	Very Usable
Overall Mean	3.61	Very Usable

These results suggest that the SG e-voting application is highly accessible and easy to use, with its user interface and experience being well-designed for smooth interaction. The high score in understandability implies that students can easily navigate the system without confusion. In contrast, the scores for operability and learnability

show that users can efficiently operate the system and quickly become familiar with its functions. Although compliance received a slightly lower score, it still indicates that the application follows important usability guidelines. The usability evaluation demonstrates that the SG e-voting application provides a seamless, user-friendly experience, making it highly suitable for student participation in elections. These factors contribute to a positive and efficient voting experience that encourages voter turnout and engagement.

Table 5 presents the evaluation results of the efficiency of the NORSU Guihulngan Student Government (SG) e-voting application, with an overall grand mean rating of 3.50, categorized as "Very Efficient." This indicates that the application performs tasks quickly and optimally, enhancing the overall election process. The evaluation measured three key parameters: time behavior, resource utilization, and compliance. Resource utilization and compliance received weighted means of 3.60, suggesting that the application efficiently uses available resources while adhering to established efficiency standards and best practices. These high scores indicate that the system optimally manages hardware, software, and other resources, ensuring smooth operation during the voting process. Time behavior, with a weighted mean of 3.30, shows that the application performs tasks promptly, though there may be slight delays in some aspects of the process.

Table 5. *Efficiency of the SG E-voting Application*

Area	Mean	Interpretation
Time-behavior	3.30	Very Efficient
Resource Utilization	3.60	Very Efficient
Compliance	3.60	Very Efficient
Overall Mean	3.50	Very Efficient

These results highlight the SG e-voting application's ability to deliver an efficient and timely voting experience. The high ratings for resource utilization and compliance underscore the system's practical management of technological resources and alignment with performance standards, which are crucial for smooth operations during elections. Although time behavior received a slightly lower score, it reflects a generally efficient system that processes tasks quickly. The evaluation indicates that the application supports a streamlined and effective voting process, which is crucial for reducing delays and ensuring timely election results. This efficiency not only enhances user experience but also contributes to the overall success and credibility of the e-voting system.

Table 6 presents the evaluation results for the maintainability of the NORSU Guihulngan Student Government (SG) e-voting application, which received a grand mean rating of 3.54 and is categorized as "Very Maintainable." This suggests that the application is designed with features that support easy maintenance, including updates, bug fixes, and other ongoing adjustments necessary to ensure its longevity and continued functionality.

Table 6. *Maintainability of the SG E-voting Application*

Area	Mean	Interpretation
Analyzability	3.60	Very Maintainable
Changeability	3.70	Very Maintainable
Stability	3.40	Very Maintainable
Testability	3.60	Very Maintainable
Compliance	3.40	Very Maintainable
Overall Mean	3.54	Very Maintainable

The evaluation measured five key parameters: analyzability, changeability, stability, testability, and compliance. With a weighted mean of 3.70, changeability received the highest score, indicating that the application can be easily modified or updated as needed. This is essential for adapting to new requirements or addressing emerging issues. Analyzability and testability, scoring 3.60, suggest that the system can be thoroughly analyzed for potential problems and tested for functionality, which is important for identifying and fixing bugs or improving performance. Stability, with a rating of 3.40, reflects the system's ability to operate consistently without significant issues, though it shows that there may be minor challenges in maintaining long-term stability. Finally, compliance, also rated at 3.40, indicates that the application adheres to standards and practices that support easy maintenance and support.

These results emphasize that the SG e-voting application is designed for easy maintenance, ensuring that it can be updated, modified, and tested with minimal difficulty. The high scores for changeability and analyzability suggest

that the application can be adapted and improved as new needs or challenges arise, ensuring its long-term viability. Although stability and compliance received slightly lower scores, they still fall within the "Very Maintainable" range, indicating that while the system may encounter occasional issues, it is overall stable and compliant with necessary maintenance practices. Overall, the maintainability of the e-voting application is strong, ensuring that it can be sustained and improved over time without significant difficulty. This is critical for ensuring the system's continuous functionality and ability to adapt to future developments or requirements in the electoral process.

Table 7 presents the evaluation results for the portability of the NORSU Guihulngan Student Government (SG) e-voting application, which received a grand mean rating of 3.50, categorized as "Very Portable." This rating indicates that the application is highly adaptable and can be easily deployed and used across various platforms, operating systems, or devices, ensuring flexibility and broad accessibility for users. The evaluation assessed four key parameters: adaptability, installability, replaceability, and compliance. Adaptability and replaceability, each scoring 3.50, suggest that the application can be easily adjusted or replaced in different environments or platforms without significant difficulties. Installability, with a score of 3.40, reflects that the application can be installed with minimal issues, though there may be slight challenges under specific conditions. Compliance, with the highest rating of 3.60, indicates that the application adheres to standards that support seamless portability across platforms and devices.

Table 7. *Portability of the SG E-voting Application*

Area	Mean	Interpretation
Adaptability	3.50	Very Portable
Install ability	3.40	Very Portable
Replaceability	3.50	Very Portable
Compliance	3.60	Very Portable
Overall Mean	3.50	Very Portable

The results highlight the application's portability, emphasizing its ease of deployment and use across various devices, operating systems, and platforms. The high ratings for adaptability and replaceability suggest that the application can be modified or transferred to different technological environments with minimal adjustments. Install ability shows that the application is easy to set up, although some platforms may present minor installation challenges. The strong rating for compliance indicates that the application meets the necessary standards for portability, ensuring its usability in diverse environments. Overall, the e-voting application's portability is well-rated, ensuring that it can be utilized across different devices and systems, which is essential for widespread use in various settings. This flexibility supports the practical and accessible implementation of e-voting processes, making it a versatile tool for the NORSU Guihulngan Student Government elections and potentially other similar applications.

3.3 Perceived Usefulness and Ease of Use of the E-voting Application

Table 8 summarizes the perceived usefulness of the NORSU Guihulngan e-voting application, with a grand mean rating of 3.50, which is categorized as very useful. This high rating indicates that users view the application as a valuable tool that offers significant benefits, enhancing the efficiency and effectiveness of the voting process. The perceived usefulness was assessed across six key features: enhanced accessibility, time and cost efficiency, real-time results, enhanced accuracy, increased security measures, and audit trail and transparency. The enhanced accessibility of the application, which allows voters to participate remotely from any location with internet access, received a rating of 3.50, highlighting its substantial contribution to broadening voter participation. Time and cost efficiency, rated 3.60, reflects the application's effectiveness in reducing the time and financial resources associated with traditional paper-based voting methods. The ability to generate and announce real-time results also received a 3.50, showcasing the application's capacity to expedite the election process. Enhanced accuracy in vote counting and recording, which minimizes human error, was rated at 3.50, reinforcing the software's contribution to ensuring reliable outcomes. The increased security measures (3.50) ensure that the integrity and confidentiality of the voting process are protected, fostering trust among users. Finally, audit trail and transparency received a rating of 3.40, reflecting the application's ability to maintain a detailed record of all voting activities, which promotes transparency and accountability in the election process.

Table 8. *Perceived Usefulness of the E-Voting Application*

Indicators	Mean	Interpretation
1. Enhanced Accessibility: The NORSU Guihulngan e-voting application offers an enhanced level of accessibility, allowing voters to participate in the voting process remotely from any location with an internet connection.	3.50	Very Useful
2. Time and Cost Efficiency: The e-voting application streamlines the voting process, reducing the time and cost of traditional paper-based voting methods.	3.60	Very Useful
3. Real-Time Results: The NORSU Guihulngan e-voting application generates and announces results in real time.	3.50	Very Useful
4. Enhanced Accuracy: The e-voting application minimizes the possibility of human error in vote counting and recording.	3.50	Very Useful
5. Increased Security Measures: The NORSU Guihulngan e-voting application can implement robust security measures to safeguard the integrity and confidentiality of the voting process.	3.50	Very Useful
6. Audit Trail and Transparency: The e-voting application can provide an audit trail, recording and preserving a detailed history of all voting activities.	3.40	Very Useful
Overall Mean	3.50	Very Useful

The perceived usefulness of the NORSU Guihulngan e-voting application indicates that the software provides significant advantages over traditional voting methods. Users highly value the application's accessibility, which allows remote participation, and its ability to save time and costs, ensuring a more efficient process. Real-time result generation and enhanced accuracy contribute to the reliability and speed of the election. Moreover, the application's security features are crucial in maintaining trust, while the audit trail function ensures transparency and accountability. With a grand mean rating of 3.50, these features demonstrate the e-voting system's effectiveness in improving the voting process, confirming its overall usefulness in the NORSU Guihulngan elections.

Table 9 outlines the perceived ease of use of the NORSU Guihulngan e-voting application, which received a grand mean rating of 3.56, indicating that the application is straightforward. This high rating suggests that users find the system intuitive, user-friendly, and efficient, with minimal barriers to interaction. Several features contribute to this positive perception of ease of use. These include an intuitive user interface, clear instructions, a familiar voting process, responsive design, error prevention mechanisms, and accessible help and support resources.

Table 9. *Perceived Ease of Use of the E-Voting Application*

Indicators	Mean	Interpretation
1. Intuitive User Interface: The NORSU Guihulngan e-voting application has a user-friendly interface, making it easy for voters to navigate and interact with the system.	3.60	Very Easy to Use
2. Clear Instructions and Prompts: The application provides clear and concise instructions and prompts throughout the voting process.	3.50	Very Easy to Use
3. Familiar Voting Process: The e-voting application emulates the familiar paper-based voting process, maintaining the traditional elements that voters are accustomed to.	3.60	Very Easy to Use
4. The application is developed with responsive design principles, ensuring compatibility across different devices and screen sizes.	3.60	Very Easy to Use
5. Error Prevention and Validation: The e-voting application incorporates error prevention mechanisms and validation checks to minimize mistakes or invalid entries.	3.60	Very Easy to Use
6. Help and Support Resources: The NORSU Guihulngan e-voting application provides easily accessible help and support resources to assist users throughout the process.	3.50	Very Easy to Use
Overall Mean	3.56	Very Easy to Use

The intuitive user interface received a rating of 3.60, reflecting that voters can easily navigate and interact with the system. The clear instructions and prompts, rated at 3.50, ensure that voters understand each step, reducing confusion during voting. The application's familiar voting process, rated at 3.60, makes it easy for users to transition from traditional paper-based voting by retaining familiar elements. Additionally, the application was designed with responsive design principles (rated 3.60), ensuring compatibility across various devices and screen sizes, which enhances accessibility for a broader range of users. Error prevention and validation checks, also rated at 3.60, help minimize mistakes and ensure valid entries, improving the accuracy of the voting process. Finally, the availability of help and support resources, rated at 3.50, provides users with assistance throughout the process, enhancing the application's ease of use.

The perceived ease of use of the NORSU Guihulngan e-voting application demonstrates its user-friendliness and accessibility. With a grand mean rating of 3.56, the application is viewed as straightforward and intuitive, making it easy for voters to engage with the system. Features such as a straightforward interface, familiar voting methods, and responsive design ensure that users of all technological backgrounds can easily participate. Incorporating error prevention mechanisms and accessible support resources further enhances the application's usability, ensuring that voters can complete the process with minimal difficulties. The combination of high perceived usefulness and ease of use reinforces the positive impact of the NORSU Guihulngan e-voting application on the voting experience, offering a reliable, efficient, and accessible platform for democratic participation.

3.4 Development of the Application

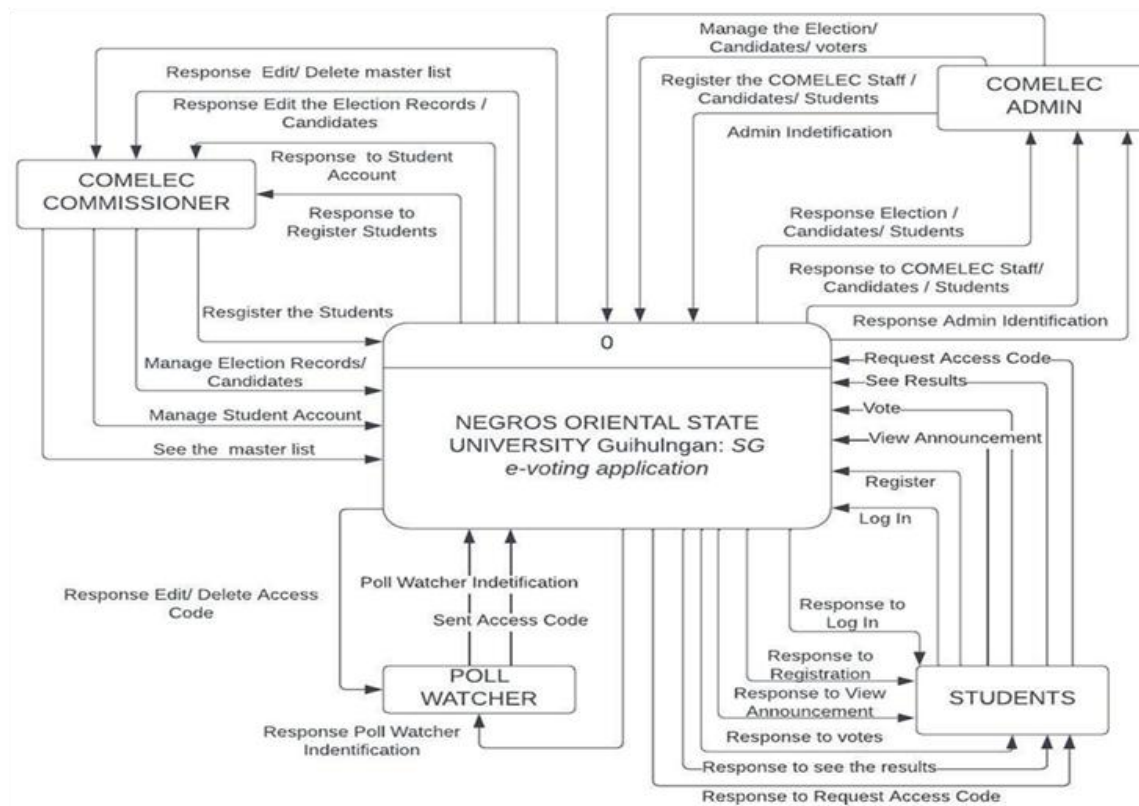


Figure 6. Context Flow Diagram of the E-Voting Application

Figure 6 depicts the Context Flow Diagram (CFD) of the NORSU Guihulngan SG e-voting application, an essential tool in systems analysis and design. The diagram visually represents the high-level interactions between the various entities involved in the system and their respective roles in the voting process. The external entities in this diagram are the COMELEC Commissioner, COMELEC Admin, Poll Watcher, and Students, each playing a vital role in the e-voting system:

COMELEC Commissioner is responsible for registering students, managing election records, and overseeing the election process. They also handle the student accounts and can edit or delete access codes. Their actions directly influence the accuracy and integrity of the voter database.

COMELEC Admin oversees the overall election process, manages election candidates and voters, and registers the COMELEC staff, candidates, and students. They are responsible for ensuring the smooth operation of the e-voting system, from voter registration to election result management.

Poll Watcher verifies and ensures the integrity of the voting process. They are responsible for identifying voters and monitoring the overall election process. They also manage access codes to ensure that only authorized individuals can access certain aspects of the system.

Students are the primary users of the e-voting application. They log into the system, register for voting, cast their votes, and request results. They can also view announcements related to the election process and receive updates regarding the voting system.

The flow of interactions in the diagram shows how these entities communicate and respond to each other. For example, students request access codes, log into the system, and vote, while the COMELEC Commissioner and Admin manage the election records and identify candidates. The Poll Watcher ensures voter identification and manages access codes for authorized individuals. This context flow diagram maps out the fundamental structure of the NORSU Guihulngan SG e-voting application and the key processes that ensure the system functions effectively. It highlights the smooth interaction between the system components. It helps to visualize the user experience, emphasizing the roles of different users and how they contribute to the voting process.

Figure 7 illustrates the use case diagram for the NORSU – Guihulngan Student Government COMELEC e-voting mobile application. It provides a visual representation of the interactions between various system users and the application, helping to understand the roles, functionalities, and relationships between different components of the e-voting system.



Figure 7. Use Case Diagrams of Student Government COMELEC E-Voting Mobile Application

The Student Voter plays a central role in the diagram. The primary actions available to the student include requesting an access code, logging in, registering for the election, viewing announcements, casting a vote, and seeing results. Notably, there is an extended relationship to the Wait for Election use case, indicating that the student may have to wait for election results or the start of the election before engaging in specific actions. The COMELEC Web Application has several key functionalities that facilitate election management. These include processing elections, managing election records, candidates, and positions, and overseeing student accounts. COMELEC users, such as the Poll Worker, Commissioner, Student Accounts Manager, and Admin, interact with

the system based on their designated responsibilities. These roles are associated with managing user accounts, the master list, election details, and network lists.

The diagram also highlights the relationship between different user types and the functionalities they can access. The COMELEC Commissioner has broad access, including managing elections, candidates, and student accounts, while the Poll Worker focuses on verifying access codes and monitoring the election process. COMELEC Admin manages overall system functionality, including user roles and network lists, while COMELEC Student Accounts Manager handles student registrations and accounts. The use case diagram showcases how the application accommodates multiple roles within the election process, emphasizing the comprehensive management and user-specific functionalities integral to the NORSU Guihulngan Student Government's e-voting application.

4.0 Conclusion

The study concludes that the respondents, with their diverse profiles, provided valuable insights into the quality of the NORSU-Guihulngan student government election process. The findings emphasized the inefficiencies of the current manual voting system, particularly the excessive time spent on casting and tallying ballots, which can take 4 to 5 hours. This highlighted the urgent need for technological solutions to streamline the election process and improve efficiency. Implementing an e-voting application emerges as a viable solution to address these issues, offering a more efficient, secure, and transparent alternative. A robust e-voting system featuring a user-friendly interface, secure authentication, ballot verification, auditing capabilities, real-time vote tallying, and strong data privacy measures can significantly enhance the election process.

These features not only improve accessibility but also ensure greater security and transparency, fostering a more reliable and trusted system. The study's findings imply that a thorough evaluation of the e-voting application, based on these criteria, is essential for determining its effectiveness in ensuring fair, efficient, and secure student government elections at NORSU-Guihulngan. Several recommendations arise from these findings. First, students should be encouraged to adopt the e-voting application, as it was rated excellent by the 106 respondents, offering them a firsthand experience of its security and efficiency features. Efforts to improve the current manual voting system should continue, focusing on reducing time consumption and enhancing the election process.

Introducing an e-voting system can help minimize ballot confusion, increase accuracy, and promote transparency, improving the integrity and accessibility of elections. The study also suggests that developers and administrators collaborate to address identified issues, ensuring regular updates and maintaining the system's security and functionality. Post-election surveys should be conducted to collect user feedback, facilitating ongoing improvements. Additionally, usability testing with student representatives will help refine the user experience, and clear communication regarding the voting process, including vote counting and verification methods, is crucial. By implementing these measures, NORSU-Guihulngan can optimize its election process, providing a reliable, efficient, and inclusive platform that enhances voter confidence and participation. This will improve the immediate election process and set a precedent for other institutions seeking to modernize their electoral systems, reinforcing the importance of technological solutions in advancing democratic practices.

5.0 Contributions of Authors

Eden Grace V. Tabanao contributed to the formal analysis, writing, review, editing, visualization, and funding acquisition.

Jed Christian L. Cece was responsible for data curation, conceptualization, writing of the original draft, funding acquisition, validation, methodology, and project administration.

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7.0 Conflict of Interests

The authors declare that they have no known competing financial interests or personal relationships that might influence the work reported in this paper.

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