JOURNAL OF INTERDISCIPLINARY PERSPECTIVES

ISSN Print: 2984-8288, ISSN Online: 2984-8385
Vol. 3 No. 8, 526-537, August 2025

On the Dimensions of Managerial Readiness among Radiologic Technologists in Davao Region, Philippines: A Factorial Analysis Approach

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Date received: April 21, 2025
Date revised: June 20, 2025
Date accepted: July 14, 2025

Originality: 95%
Grammarly Score: 99%
Similarity: 5%

Recommended citation:
Coronica, J. M., & Prado, N. (2025). On the dimensions of managerial readiness among radiologic technologists: A factorial analysis approach. *Journal of Interdisciplinary Perspectives*, *3*(8), 526-537.
https://doi.org/10.69569/jip.2025.298

Abstract. This study aimed to develop and validate a reliable instrument for assessing managerial readiness among radiologic technologists employed in tertiary hospitals across the Davao Region (Region XI) in the Philippines. Utilizing an exploratory sequential design, the research was conducted between June 2024 and April 2025 in two phases. The qualitative phase involved in-depth interviews with 15 department heads, from which three core themes—managerial competence, managerial capability, and interpersonal relations—emerged through thematic analysis. These themes informed the construction of an initial 45-item instrument. In the quantitative phase, the instrument was distributed to 230 radiologic technologists for empirical testing. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were conducted to validate the underlying structure, yielding a refined 30-item tool organized into three robust dimensions. The final scale demonstrated strong construct validity, with factor loadings exceeding 0.60, and high internal consistency, as indicated by Cronbach's alpha coefficients of 0.920 for managerial competence, 0.921 for managerial capability, and 0.888 for interpersonal relations, with an overall reliability score of 0.910. The alignment of factor structures with the Great Eight Competency Theory supported the theoretical soundness of the instrument. The main findings revealed that managerial readiness among radiologic technologists is multidimensional and is significantly shaped by their operational experience, communication skills, and adaptability to leadership demands. The validated instrument, named Coronica's Managerial Readiness Scale, provides a psychometrically sound tool for identifying and supporting technologists as they transition into managerial roles. This tool has important implications for workforce development, succession planning, and the design of targeted leadership training programs in healthcare settings. It also fills a gap in the literature by offering an empirically derived framework specific to radiologic technologists in a developing country context, contributing to both academic research and practical applications in healthcare leadership development.

Keywords: Interpersonal relations; Managerial capability; Managerial competence; Managerial readiness; Radiologic technologists.

1.0 Introduction

Radiologic technologists play a critical role in the healthcare system, transitioning from primarily technical roles to positions that increasingly demand leadership and managerial competencies. This shift highlights the importance of understanding the factors that impact their preparedness for managerial responsibilities. Drawing

from professional experiences within radiology departments, one recurring challenge has been the lack of structured assessment and development opportunities focused on managerial readiness. Understanding these dimensions is not only crucial for the career progression of radiologic technologists but also essential for optimizing healthcare delivery, particularly in complex and resource-limited settings.

Managerial readiness is recognized as a vital factor in organizational success. Beyond defining managerial traits, it determines the organization's trajectory under the stewardship of those in leadership roles (Treglown et al., 2020). Accepting a managerial position requires discernment, as the responsibilities often outweigh the privileges attached to the role. In some healthcare contexts, notably when formal qualifications are lacking, tenure and performance become the primary bases for promotion (Mojar & Depositario, 2020). Department heads in radiology play pivotal roles, as they must bridge clinical expertise with administrative competencies, manage departmental operations, and align their efforts with institutional goals.

Globally, several studies have highlighted gaps in managerial preparation. In Malawi, unit managers reported challenges such as inadequate material (86.4%) and human (94.5%) resources, a lack of managerial skills (5.4%), and perceived their roles as stressful (38.9%) and challenging (47.2%) (Chitsulo et al., 2014). Similarly, Fanelli et al. (2020) emphasized that healthcare professionals in Italy must cultivate skills beyond clinical expertise to improve organizational performance. In the Philippines, managerial readiness among radiologic technologists is significantly influenced by factors such as age, educational attainment, years of service, management-related training, and organizational support. Department heads who engage in career development tend to exhibit higher managerial competence, particularly in supportive environments (Wong, 2020). Sison and Rodelas (2024) further found that radiologic technologists scored lower in strategic thinking, innovation, and leadership competencies, with notable variations tied to educational attainment.

Despite the growing demand for leadership in radiology, many healthcare professionals report feeling unprepared to assume managerial responsibilities (Fanelli et al., 2022). Although studies have explored core competencies in various industries, limited empirical research has been conducted to evaluate managerial readiness specifically among radiologic technologists. Given their central role in departmental efficiency and patient care, there is a pressing need to assess and develop their leadership capabilities systematically.

This study, therefore, aimed to explore the dimensions of managerial readiness among radiologic technologists who lead or aspire to manage radiology departments. It also aimed to identify the challenges, learning experiences, and realizations of individuals transitioning into leadership roles. The findings of this study provide critical insights for hospital administrators to design targeted leadership development programs and to establish a validated evaluation tool to support succession planning and capacity building within radiology departments.

2.0 Methodology

This chapter outlines the procedures undertaken in the study, which utilized a mixed-methods research approach, specifically the exploratory sequential design. It includes details on the research setting, participants, instruments, data gathering and analysis, and ethical safeguards employed throughout the research process.

2.1 Research Design

The study employed an exploratory sequential design, beginning with qualitative data collection through interviews and focus group discussions, followed by the development and validation of a quantitative survey instrument. This mixed-methods approach allowed for a comprehensive understanding of managerial readiness among radiologic technologists by integrating lived experiences with measurable constructs.

2.2 Research Locale

The research was conducted in selected tertiary hospitals within the Davao Region, Philippines. These hospitals provided a diverse and representative sample of radiologic technologists operating in varied healthcare environments.

2.3 Research Participants

In the qualitative phase, 15 department heads participated (8 in in-depth interviews, 7 in focus group discussions), selected through purposive sampling. For the quantitative phase, 200 radiologic technologists were surveyed,

with the sample divided into two groups for exploratory and confirmatory factor analyses, ensuring broad representation of the target group. Finally, 30 respondents participated in the pilot study to ensure the reliability of the measurement tool.

2.4 Research Instrument
The instruments used were developed in phases: qualitative tools included validated interviews and FGD guides, while the quantitative tool—a managerial readiness survey—was constructed based on identified themes and validated using EFA, CFA, and reliability testing. Expert validation was conducted to ensure the instrument's quality and reliability.

2.5 Data Gathering Procedure
Data collection followed a three-phase structure: (1) qualitative phase involving interviews and FGDs conducted online, (2) development and validation of the measurement tool from qualitative findings, and (3) quantitative phase utilizing online surveys. Ethical clearance and informed consent were secured prior to data collection.

2.6 Ethical Considerations
The study adhered to ethical standards, including approval from the Liceo de Cagayan - Institutional Research Ethics Board with protocol number 2024-10-1453-CON-GS, informed consent, data anonymization, and secure data storage. Participants were not monetarily compensated, but they received tokens of appreciation, and their rights to privacy and withdrawal were respected throughout.

2.7 Data Analysis
Qualitative data were analyzed using thematic analysis to extract recurring themes and insights. Quantitative data underwent Exploratory and Confirmatory Factor Analysis to validate the tool's construct and structure, followed by reliability testing using Cronbach's Alpha. Mixed-method integration occurred through triangulation of qualitative and quantitative results.

3.0 Results and Discussion
This section presents the results and analysis from both qualitative and quantitative strands of the study. The qualitative phase identified key themes on the managerial readiness of radiologic technologists, which informed the development of a measurement tool. The quantitative analysis details the tool's construction, factor structure, and validation, followed by the integration of findings from both phases to ensure comprehensive insights.

3.1 Dimensions Generated from the Themes Extracted from the Experiences of the Radiologic Technologists
Table 1 presents the core dimensions of managerial readiness, derived from the lived experiences of radiologic technologists. These dimensions encapsulate key competencies and challenges encountered during the transition into leadership roles. Operational competencies such as process optimization, strategic decision-making, and resource management emphasize the need for technical proficiency and innovation. Concurrently, themes related to leadership transition, mentorship, and communication highlight the interpersonal and adaptive demands of managerial roles, underscoring the importance of emotional intelligence, navigating authority, and team dynamics.

Organizational and ethical competencies are reflected in themes such as policy implementation, fairness and inclusivity, and quality improvement, demonstrating the importance of alignment with institutional goals and values. Furthermore, the emergence of themes like leadership preparedness and accessible development pathways points to a pressing need for structured, continuous leadership training within the profession. Guided by these themes, a 50-item checklist was developed, as shown in Table 1, representing the Radiologic Technologist Managerial Readiness Scale. The checklist items were constructed directly from the participants' narratives during in-depth interviews and focus group discussions. These items formed the basis for subsequent statistical validation through Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA), ensuring both theoretical coherence and empirical robustness of the proposed measurement tool.

Table 1. *Dimensions Generated from the Themes Extracted from the Experiences of the Radiologic Technologists*

Essential Themes	Dimensions of Managerial Readiness
Process Optimization and Resource Management	Process optimization, resource management, and innovation management
Organizational Influences and Decision-Making	Unplanned leadership opportunity
Leadership Transition	Leadership transition, shifting roles in management, responsibility and commitment, empowerment, and positive impact
Building Collaborative and Inclusive Teams	Team collaboration and organizational dynamics
Mentoring	Mentorship and professional guidance
Strategic Decision-Making	Balancing risk and outcomes, managerial decision-making
Optimized Policy Implementation	Ensuring policy adherence
Leadership Preparedness	Career continuous development, motivation, and career growth
Redefined Managerial Responsibilities	Increased scope of accountability, challenges in balancing time and responsibilities
Communication and Team Management	Communication as a catalyst, team collaboration
Overcoming Authority and Relationship Challenges	Challenges in handling former peers, asserting authority
Promoting Fairness and Inclusivity	Active listening and empathy, promoting fairness and inclusivity, establish mutual understanding and respect
Quality Improvement and Organizational Growth	Enhance operational efficiency, technical expertise, and compliance
Leadership Styles in Dynamic Environments	Leadership transition and strategic planning, leadership, and team empowerment
Accessible Leadership Development	Leadership development programs, structured leadership training, continuous learning activities, and accessible training

3.2 Proposed Checklist Questionnaire to Assess Managerial Readiness to be Subjected to EFA

Table 2 presents the proposed 50-item checklist questionnaire designed to assess managerial readiness among radiologic technologists, which will be subjected to Exploratory Factor Analysis (EFA) for validation. The items are structured around key dimensions derived from the qualitative phase, covering managerial competence, capability, and interpersonal relations. Each statement is rated on a five-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (5), allowing respondents to reflect on their self-perceived preparedness and behaviors related to leadership roles. The items encompass various managerial domains, including leadership transition, decision-making, team building, resource management, policy implementation, continuous learning, emotional intelligence, ethical conduct, communication, adaptability, and performance management. The questionnaire is designed not only to measure technical and administrative competencies but also to capture behavioral indicators of readiness, such as conflict resolution, motivation, and strategic thinking. The comprehensiveness of the tool ensures that it captures both tangible skills and the soft skills essential for effective leadership, aligning with the theoretical foundation of the Great Eight Competency Model. The outcomes of this instrument, once statistically validated, are intended to guide both individual career development and institutional leadership training initiatives in the field of radiologic practice.

Table 2. *Proposed Checklist Questionnaire to be Subjected to EFA*

Statements	5	4	3	2	1
As a Radiologic Technologist…					
1. I feel prepared to transition from a technical role to a managerial role.					
2. I can balance technical and managerial responsibilities effectively.					
3. I embrace leadership challenges as opportunities for growth.					
4. I have a clear understanding of the expectations in a managerial position.					
5. I can confidently take on leadership responsibilities despite initial uncertainties.					
6. I can make well-informed decisions considering multiple perspectives.					
7. I am capable of balancing risks and outcomes in decision-making.					
8. I can resolve departmental challenges using critical thinking skills.					
9. I ensure that my decisions align with institutional policies and guidelines.					
10. I effectively assess situations and determine the best course of action.					
11. I can effectively build a positive and cohesive work environment.					
12. I encourage open and consistent communication among team members.					
13. I handle conflicts among colleagues professionally and objectively.					
14. I can mentor and guide team members to develop their skills.					
15. I promote teamwork and inclusivity in decision-making processes.					
16. I can implement policies and procedures to optimize workflow and efficiency.					
17. I ensure adherence to institutional guidelines in managerial decisions.					
18. I can manage limited resources effectively.					
19. I can develop strategies for improving department operations.					

20. I actively participate in policy development for my department.
21. I seek opportunities to enhance my leadership skills through training.
22. I stay updated on technological advancements in radiology management.
23. I am proactive in preparing for leadership roles through continuous learning.
24. I believe in the importance of structured leadership development programs.
25. I am motivated to pursue career growth in managerial positions.
26. I can assert my authority while maintaining positive workplace relationships.
27. I manage resistance from staff effectively using emotional intelligence.
28. I handle conflicts with former colleagues professionally.
29. I gain respect from my subordinates through fair leadership.
30. I ensure objectivity and professionalism when making managerial decisions.
31. I uphold ethical standards in all managerial decisions.
32. I promote fairness and transparency in workplace policies.
33. I ensure that all team members adhere to professional conduct.
34. I handle sensitive workplace matters with integrity and confidentiality.
35. I demonstrate accountability in my managerial responsibilities.
36. I can effectively communicate expectations to my team members.
37. I listen actively and address concerns raised by my staff.
38. I mediate conflicts between employees in a professional manner.
39. I provide constructive feedback to improve team performance.
40. I maintain open and respectful communication with all staff members.
41. I remain calm and effective when handling workplace crises.
42. I quickly adapt to changes in hospital policies and procedures.
43. I implement contingency plans to ensure operational efficiency.
44. I can make urgent decisions under pressure without compromising quality.
45. I manage unexpected challenges with confidence and strategic thinking.
46. I regularly assess the performance of my team members.
47. I provide opportunities for staff training and career advancement.
48. I offer feedback and coaching to enhance employee skills.
49. I recognize and reward outstanding performance within my department.
50. I set clear performance expectations and goals for my team.

Legend:

5 – strongly agree
4 – agree
3 – moderately agree
2 – disagree
1 – strongly disagree

3.3 Preliminary Screening of Radiologic Technologists' Managerial Readiness

Table 3 presents the quantitative validation of the managerial readiness construct. A 50-item checklist was administered to 200 radiologic technologists from tertiary hospitals across the Davao Region (Region XI). The collected responses were subjected to Exploratory Factor Analysis (EFA), which served as the initial screening mechanism for identifying the latent structure underlying the lived experiences of managerial readiness. The scree plot guided factor extraction, and clean factor loadings were prioritized for analysis. Items with cross-loadings were retained only if the loading differential met or exceeded the 0.20 threshold; otherwise, such items were removed to ensure factorial clarity. The EFA results, presented in Table 3, revealed a four-factor structure, reflecting the multidimensionality of managerial readiness among radiologic technologists. Collectively, these factors suggest a comprehensive framework for managerial readiness, emphasizing the integration of technical expertise, adaptive leadership, interpersonal competence, and strategic governance. The resulting factor structure provides a strong empirical foundation for the subsequent Confirmatory Factor Analysis (CFA), which aims to validate and refine the emerging model of managerial readiness specific to the radiologic technologist context.

The communalities after extraction ranged predominantly between 0.40 and 0.80, suggesting that the extracted factors explained a substantial proportion of variance in most items. Utilizing Principal Axis Factoring with Promax rotation, the Pattern Matrix revealed a stable four-factor solution, with most items demonstrating significant loadings above the 0.40 threshold. Factor 1 exhibited strong loadings for items such as item 7 (.871), item 8 (.741), and item 43 (.797), indicating a cohesive cluster associated with *leadership and team empowerment*. Factor 2 reflected aspects of *managerial transition and role adjustment*, as evidenced by loadings from item 3 (.635)

and item 9 (.609). Factor 3 captured themes related to *strategic functions and policy implementation*, with high loadings on items 11 (.741), 12 (.757), and 13 (.817). Lastly, Factor 4 encompassed elements of *professional development and continuous learning*, supported by loadings such as item 40 (.651) and item 38 (.550).

Table 3. *Pattern Matrix of the 50-item Radiologic Technologists Managerial Readiness*

Items	Factor			
	1	2	3	4
1. I feel prepared to transition from a technical role to a managerial role.		.561		
2. I can balance technical and managerial responsibilities effectively.		.644		
3. I embrace leadership challenges as opportunities for growth.			.635	
4. I have a clear understanding of the expectations in a managerial position.		.530		
5. I can confidently take on leadership responsibilities despite initial uncertainties.		.640		
6. I can make well-informed decisions considering multiple perspectives.		.671		
7. I am capable of balancing risks and outcomes in decision-making.		.871		
8. I can resolve departmental challenges using critical thinking skills.		.741		
9. I ensure that my decisions align with institutional policies and guidelines.			.609	
10. I effectively assess situations and determine the best course of action.		.442		
11. I can effectively build a positive and cohesive work environment.				.741
12. I encourage open and consistent communication among team members.				.757
13. I handle conflicts among colleagues professionally and objectively.				.817
14. I can mentor and guide team members to develop their skills.			.513	
15. I promote teamwork and inclusivity in decision-making processes.			.618	
16. I can implement policies and procedures to optimize workflow and efficiency.			.553	
17. I ensure adherence to institutional guidelines in managerial decisions.			.718	
@18		.503	.520	
19. I can develop strategies for improving department operations.			.533	
20. I actively participate in policy development for my department.			.739	
21. I seek opportunities to enhance my leadership skills through training.			.704	
22. I stay updated on technological advancements in radiology management.			.611	
23. I am proactive in preparing for leadership roles through continuous learning.			.595	
24. I believe in the importance of structured leadership development programs.			.630	
@25				
@26		.432		.585
27. I manage resistance from staff effectively using emotional intelligence.		.469		
28. I handle conflicts with former colleagues professionally.				.536
29. I gain respect from my subordinates through fair leadership.				.505
30. I ensure objectivity and professionalism when making managerial decisions.			.519	
31. I uphold ethical standards in all managerial decisions.			.706	
32. I promote fairness and transparency in workplace policies.				.486
33. I ensure that all team members adhere to professional conduct.				.424
@34				
35. I demonstrate accountability in my managerial responsibilities.	.555			
@36	.417			.559
37. I listen actively and address concerns raised by my staff.	.507			
38. I mediate conflicts between employees in a professional manner.				.550
@39	.488			.525
40. I maintain open and respectful communication with all staff members.				.651
41. I remain calm and effective when handling workplace crises.	.475			
42. I quickly adapt to changes in hospital policies and procedures.			.482	
43. I implement contingency plans to ensure operational efficiency.	.797			
44. I can make urgent decisions under pressure without compromising quality.	.685			
45. I manage unexpected challenges with confidence and strategic thinking.	.663			
46. I regularly assess the performance of my team members.	.776			
47. I provide opportunities for staff training and career advancement.	.744			
48. I offer feedback and coaching to enhance employee skills.	.696			
49. I recognize and reward outstanding performance within my department.	.681			
50. I set clear performance expectations and goals for my team.	.655			

Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization.
a. Rotation converged in 14 iterations.

As shown in Table 4, the factor correlation matrix indicates moderate to high inter-factor correlations, ranging from 0.492 to 0.682. These values support the appropriateness of employing oblique rotation (Promax), given the assumption of interrelated latent constructs. The observed correlations reflect the interconnectedness of

managerial readiness dimensions, reinforcing the notion that leadership competencies do not operate in isolation but rather function as an integrated set of capabilities. This finding is consistent with contemporary leadership models, which highlight the interplay between cognitive, interpersonal, and strategic competencies in effective managerial performance (Yukl & Mahsud, 2020).

Table 4. *Factor Correlation Matrix*

Factor	1	2	3	4
1	1.000	.530	.681	.667
2	.530	1.000	.594	.492
3	.681	.594	1.000	.682
4	.667	.492	.682	1.000

Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization.

3.4 Dimensions of Radiologic Technologists' Managerial Readiness

The results of the Exploratory Factor Analysis (EFA) in Table 5 provided robust evidence supporting the factorial structure of the scale assessing managerial readiness among radiologic technologists. To assess the suitability of the data for factor analysis, both the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity were conducted. The KMO value was 0.849, indicating meritorious sampling adequacy (Field, 2020), suggesting that the sample size and inter-item correlations were sufficient for reliable factor extraction. In addition, Bartlett's Test of Sphericity yielded a statistically significant result ($\chi^2 = 6261.930$, $df = 1225$, $p < .001$), confirming that the correlation matrix was not an identity matrix. This indicates the presence of patterned relationships among variables, thereby justifying the continuation with factor analysis. Collectively, these results validate the data's factorability and affirm the appropriateness of the EFA in identifying the underlying dimensions of managerial readiness within the radiologic technologist population.

Table 5. *KMO and Bartlett's Test*

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.849
Bartlett's Test of Sphericity	Approx. Chi-Square	6261.930
	df	1225
	Sig.	.000

Table 6 presents the finalized factor structure derived through Exploratory Factor Analysis (EFA), revealing a coherent four-factor model. The initial 50-item scale was subjected to principal axis factoring with Promax rotation and Kaiser Normalization, as inter-factor correlations exceeded 0.40, indicating the assumption of orthogonality was not met and justifying the use of oblique rotation. The pattern matrix confirmed that item loadings across all four factors exceeded the 0.40 threshold, demonstrating strong associations between observed variables and their corresponding latent constructs. The analysis resulted in a refined 46-item structure comprising four distinct factors: Factor 1, Managerial Competence (11 items); Factor 2, Managerial Capability (9 items); Factor 3, Managerial Adaptability (15 items); and Factor 4, Interpersonal Relations (9 items). Each factor reflects a critical domain of managerial readiness, grounded in theoretical insights and shaped by empirical evidence. This factor structure aligns closely with the a priori dimensions identified during the qualitative phase of the study, underscoring the consistency between participant narratives and statistical validation. The resulting model effectively captures the multidimensional nature of managerial readiness among radiologic technologists, providing a reliable foundation for subsequent confirmatory factor analysis.

3.5 Confirmatory Testing of the Radiologic Technologists' Managerial Readiness Model

Figure 1 presents the Confirmatory Factor Analysis (CFA) model developed to validate the structure of managerial readiness among radiologic technologists. The initial 44-item model was evaluated to confirm the factor structure, item-factor relationships, and overall model fit. Items exhibiting cross-loadings or weak standardized factor loadings (i.e., < .60) were systematically removed to enhance the model's parsimony and fit. This refinement process yielded a more robust and interpretable model, with retained items exhibiting strong loadings (≥ 0.60) on their respective latent constructs. One factor, Managerial Adaptability (MDAP), was excluded from the final model due to excessively high correlations with another factor, indicating an issue with discriminant validity. Additionally, several items were removed because they failed to meet the criteria for convergent validity or demonstrated dual loadings across multiple factors. The final CFA model confirms the structural integrity of the remaining dimensions, offering empirical support for their distinctiveness and internal consistency. These

adjustments contributed to an improved model fit and enhanced the theoretical clarity of the managerial readiness construct in the context of radiologic technologists.

Table 6. *The Factor Structure of the Radiologic Technologist Managerial Readiness*

Statements	Factor Loading	Decision
Factor 1. Managerial Competence		
35. I demonstrate accountability in my managerial responsibilities.	.555	Retained
37. I listen actively and address concerns raised by my staff.	.507	Retained
41. I remain calm and effective when handling workplace crises.	.475	Retained
43. I implement contingency plans to ensure operational efficiency.	.797	Retained
44. I can make urgent decisions under pressure without compromising quality.	.685	Retained
45. I manage unexpected challenges with confidence and strategic thinking.	.663	Retained
46. I regularly assess the performance of my team members.	.776	Retained
47. I provide opportunities for staff training and career advancement.	.744	Retained
48. I offer feedback and coaching to enhance employee skills.	.696	Retained
49. I recognize and reward outstanding performance within my department.	.681	Retained
50. I set clear performance expectations and goals for my team.	.655	Retained
Factor 2. Managerial Capability		
1. I feel prepared to transition from a technical role to a managerial role.	.561	Retained
2. I can balance technical and managerial responsibilities effectively.	.644	Retained
4. I have a clear understanding of the expectations in a managerial position.	.530	Retained
5. I can confidently take on leadership responsibilities despite initial uncertainties.	.640	Retained
6. I can make well-informed decisions considering multiple perspectives.	.671	Retained
7. I am capable of balancing risks and outcomes in decision-making.	.871	Retained
8. I can resolve departmental challenges using critical thinking skills.	.741	Retained
10. I effectively assess situations and determine the best course of action.	.442	Retained
27. I manage resistance from staff effectively using emotional intelligence.	.469	Retained
Factor 3. Managerial Adaptability		
3. I embrace leadership challenges as opportunities for growth.	.635	Retained
9. I ensure that my decisions align with institutional policies and guidelines.	.609	Retained
14. I can mentor and guide team members to develop their skills.	.513	Retained
15. I promote teamwork and inclusivity in decision-making processes.	.618	Retained
16. I can implement policies and procedures to optimize workflow and efficiency.	.553	Retained
17. I ensure adherence to institutional guidelines in managerial decisions.	.718	Retained
19. I can develop strategies for improving department operations.	.533	Retained
20. I actively participate in policy development for my department.	.739	Retained
21. I seek opportunities to enhance my leadership skills through training.	.704	Retained
22. I stay updated on technological advancements in radiology management.	.611	Retained
23. I am proactive in preparing for leadership roles through continuous learning.	.595	Retained
24. I believe in the importance of structured leadership development programs.	.630	Retained
30. I ensure objectivity and professionalism when making managerial decisions.	.519	Retained
31. I uphold ethical standards in all managerial decisions.	.706	Retained
42. I quickly adapt to changes in hospital policies and procedures.	.482	Retained
Factor 4. Interpersonal Relations		
11. I can effectively build a positive and cohesive work environment.	.741	Retained
12. I encourage open and consistent communication among team members.	.757	Retained
13. I handle conflicts among colleagues professionally and objectively.	.817	Retained
28. I handle conflicts with former colleagues professionally.	.536	Retained
29. I gain respect from my subordinates through fair leadership.	.505	Retained
32. I promote fairness and transparency in workplace policies.	.486	Retained
33. I ensure that all team members adhere to professional conduct.	.424	Retained
38. I mediate conflicts between employees in a professional manner.	.550	Retained
40. I maintain open and respectful communication with all staff members.	.651	Retained

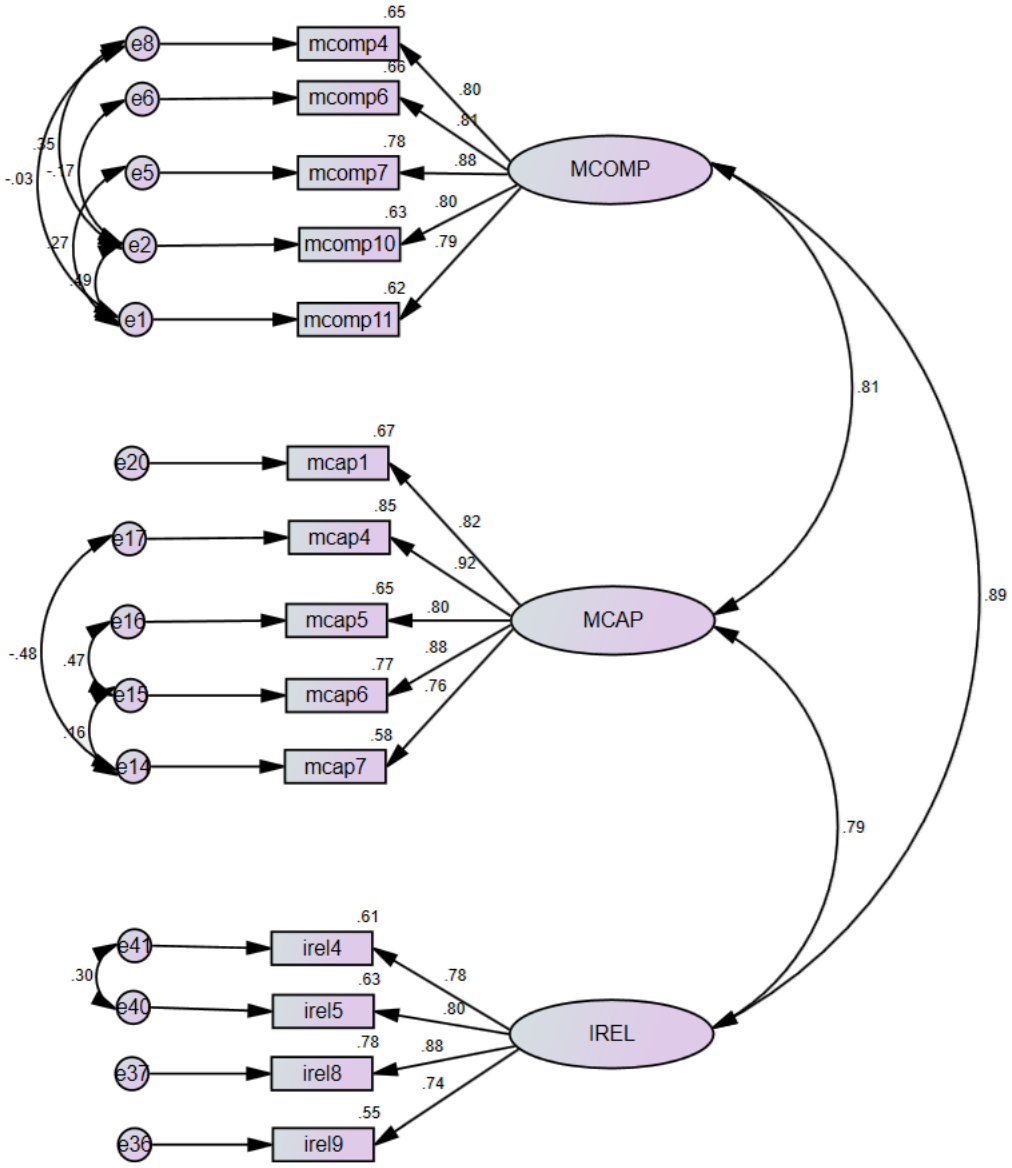

Figure 1. *Exhibits the CFA Model of the Radiologic Technologist Managerial Readiness*

Figure 1 illustrates the structural equation model (SEM) depicting the relationships among three latent constructs: **Managerial Competence (MCOMP)**, **Managerial Capability (MCAP)**, and **Interpersonal Relations (IREL)**. Each latent variable is represented by multiple observed indicators, shown as rectangular nodes, with corresponding factor loadings denoting the strength of association between each observed variable and its latent construct. For example, MCOMP is measured by five indicators (mcomp4 to mcomp11), all of which exhibit strong loadings (e.g., 0.88, 0.80), indicating their reliability as measures of the construct. Likewise, MCAP and IREL are supported by well-loading indicators, confirming their measurement validity. The curved bidirectional arrows between latent variables represent inter-construct correlations. High correlations were observed: MCOMP and MCAP (.89), MCAP and IREL (.79), and MCOMP and IREL (.81), suggesting these dimensions are conceptually and empirically interrelated. The presence of measurement errors (e1 to e40) accounts for unique variance that is unexplained by the latent constructs, as is standard in SEM. These results provide empirical support for the theoretical framework and underscore the integrative nature of managerial readiness. From a practical standpoint, the findings advocate for a holistic approach to leadership development, wherein technical competencies (e.g., strategic decision-making and operational management) are cultivated alongside relational skills (e.g., emotional intelligence and collaboration). As leadership roles increasingly require adaptability, empathy, and interpersonal effectiveness,

integrating these domains into a unified training model may enhance managerial performance and readiness (Nguyen et al., 2021). The high intercorrelations further emphasize the need to treat these competencies as interdependent rather than discrete domains within leadership development programs.

3.6 Goodness of Fit of the Conceptual Model

Table 7 presents the goodness-of-fit indices for the proposed structural equation model, demonstrating that the model provides an adequate representation of the observed data. The chi-square divided by degrees of freedom (CMIN/DF) yielded a value of 1.279, well below the commonly accepted threshold of 2.0, indicating a strong model fit. The non-significant chi-square test (p = .064) further supports the model's appropriateness. Key fit indices, including the Normed Fit Index (NFI = .935), Tucker-Lewis Index (TLI = .979), Comparative Fit Index (CFI = .985), and Goodness-of-Fit Index (GFI = .901), all surpassed the recommended minimum criterion of .90, reflecting an excellent fit between the model and the data. Although the Root Mean Square Error of Approximation (RMSEA = .053) slightly exceeds the ideal value of .05, it remains within acceptable limits. Moreover, the PCLOSE value of .420—well above the conventional cutoff of .05—suggests that the RMSEA is not significantly different from that of a close-fitting model. Collectively, these indices provide robust evidence of a well-fitting conceptual model.

Table 7. *Goodness of Fit of the Conceptual Model*

Index Value	Standard Value/Criterion	Model Fit Value
CMIN/DF	<2.0	1.279
P-Value	>.05	.064
NFI	>.90	.935
TLI	>.90	.979
CFI	>.90	.985
GFI	>.90	.901
RMSEA	<.05	.053
PCLOSE	>.05	.420

Legend:
CMIN/DF - Chi-square Minimum/Degree of Freedom
NFI - Normal Fit Index
TLI - Tucker-Lewis Index
CFI - Comparative Fit Index
GFI - Goodness of Fit Index
RMSEA - Root Mean Square Error of Approximation
PCLOSE - Probability of Close Fit

3.7 Reliability Assessment of the Measurement Scale

Table 8 presents the results of the reliability analysis conducted to assess the internal consistency of the instrument following confirmatory factor analysis (CFA). The finalized tool comprises 14 items distributed across three core dimensions: **Managerial Competence**, **Managerial Capability**, and **Interpersonal Relations**. These dimensions emerged as the most robust factors based on the CFA results and form the foundation of the validated scale used to measure managerial readiness among radiologic technologists. The **Managerial Competence** dimension assesses the ability to implement performance management strategies, respond strategically to challenges, and engage in effective operational planning. **Managerial Capability** reflects the readiness to assume leadership roles, exercise sound decision-making, and demonstrate critical thinking in complex and uncertain scenarios. The **Interpersonal Relations** dimension encompasses essential soft skills, including conflict resolution, effective communication, and fostering respectful and inclusive working relationships—key components for managing multidisciplinary healthcare teams.

Each item on the scale is rated using a 5-point Likert format, ranging from "*strongly disagree*" *(1) to* "*strongly agree*" *(5), allowing for a* quantitative assessment of self-perceived managerial competencies. The high internal consistency of the scale, as supported by Cronbach's alpha values, underscores the tool's reliability and construct validity. Tentatively titled **Coronica's Managerial Readiness Scale**, the instrument offers a practical framework for use in human resource evaluations, leadership development programs, and training needs assessments. This scale equips institutions with a standardized method for identifying and supporting radiologic technologists transitioning into managerial roles.

Table 8. *Crafted Measurement Tool after CFA on Radiologic Technologist Managerial Readiness*

Statements	5	4	3	2	1
As a Radiologic Technologist…					
Managerial Competence					
1. I implement contingency plans to ensure operational efficiency.					
2. I manage unexpected challenges with confidence and strategic thinking.					
3. I regularly assess the performance of my team members.					
4. I recognize and reward outstanding performance within my department.					
5. I set clear performance expectations and goals for my team.					
Managerial Capability					
1. I feel prepared to transition from a technical role to a managerial role.					
2. I can confidently take on leadership responsibilities despite initial uncertainties.					
3. I can make well-informed decisions considering multiple perspectives.					
4. I am capable of balancing risks and outcomes in decision-making.					
5. I can resolve departmental challenges using critical thinking skills.					
Interpersonal Relations					
1. I handle conflicts among colleagues professionally and objectively.					
2. I gain respect from my subordinates through fair leadership.					
3. I mediate conflicts between employees in a professional manner.					
4. I maintain open and respectful communication with all staff members.					

Legend:

5 – strongly agree
4 – agree
3 – moderately agree
2 – disagree
1 – strongly disagree

3.8 Reliability Analysis of Managerial Readiness Constructs

Table 9 presents the results of the reliability analysis conducted for the constructs comprising the Managerial Readiness Scale for radiologic technologists. The findings indicate high internal consistency across all three dimensions, with Cronbach's alpha values exceeding the widely accepted benchmark of 0.70. Specifically, **Managerial Competence** and **Managerial Capability** exhibited exceptionally high reliability, with alpha values of 0.920 and 0.921, respectively. Additionally, Interpersonal Relations demonstrated strong internal consistency, with an alpha value of 0.888 (Hair et al., 2021). The overall reliability of the 14-item scale was likewise excellent, yielding a Cronbach's alpha of .910. This result suggests that the items collectively represent a coherent and dependable measure of the overarching construct of managerial readiness (Kline, 2021). The high reliability values confirm that the scale possesses the internal consistency necessary for both academic research and practical application in assessing leadership preparedness among radiologic technologists. These findings provide strong empirical support for the scale's psychometric soundness, affirming its suitability for use in competency evaluations, training program assessments, and succession planning within healthcare institutions (Taherdoost, 2022).

Table 9. *Reliability Analysis for Radiologic Technologist Managerial Readiness*

Index Value	# of items	Cronbach's Alpha
Managerial Competence	5	.920
Managerial Capability	5	.921
Interpersonal Relations	4	.888
Managerial Readiness	**14**	**.910**

4.0 Conclusion

The conclusion of this study indicates that the managerial readiness of radiologic technologists is influenced by a complex interplay of three key dimensions: Managerial Competence, Managerial Capability, and Interpersonal Relations. The conceptual model, Coronica's Managerial Readiness Model, provides a robust framework for understanding these dimensions, which were instrumental in the development of the associated measurement tool. Additionally, the results reveal significant positive correlations among the emerging variables identified through thematic analysis. However, some variables exhibited no significant relationships, suggesting that certain factors may not have a direct influence on each other. The validated factor structure further supports the alignment of these dimensions with real-world managerial demands, particularly within the context of complex healthcare environments. The model's congruence with the Great Eight Competency Theory underscores the broader applicability and relevance of these competencies, particularly as radiologic technologists transition into leadership roles. By integrating both qualitative insights and quantitative validation, this study emphasizes the

critical importance of strategic decision-making, inclusive leadership, and systems thinking in effective managerial practice. Practically, the findings can be applied in the development of targeted training programs, leadership pipelines, and performance evaluation tools specific to radiology departments. Institutions may use the validated instrument to identify potential leaders, assess training needs, and structure mentoring initiatives that align with organizational goals. Future research should investigate the longitudinal effects of managerial readiness training on leadership performance, expand the model's application to other allied health professions, and examine the impact of organizational culture and policy frameworks on the development of managerial competencies in clinical settings.

5.0 Contributions of Authors

All authors made equal contributions to this research.

6.0 Funding

This research received no funding.

7.0 Conflict of Interests

The author declares that there are no conflicts of interest associated with this study.

8.0 Acknowledgment

The researcher extends heartfelt gratitude to all individuals and institutions who played a vital role in the successful completion of this study. Sincere appreciation is given to Liceo de Cagayan University for its supportive academic environment, and to Dr. Nenita I. Prado, the dissertation adviser, for her invaluable guidance and mentorship. The researcher also acknowledges the insightful contributions of the dissertation panel, led by Dr. Mariano M. Lerin (Chairman), Dr. Bernarda Lleno, and Dr. Christy G. Dablo, and expresses thanks to Dr. Gloria M. Cunanan for her steadfast support. Deep appreciation is extended to the expert validators, Dr. Hazel T. Victoriano, Dr. Samuel Migallos, and Dr. Darylle Hanna Millanes-Ngo, as well as to statisticians Dr. Janice B. Sawe and Dr. Felix C. Chavez Jr., for their assistance in data analysis. Gratitude is also due to all participants for their time and insights, as well as to the researcher's family, friends, colleagues, and significant other for their unwavering support. Above all, the researcher gives thanks to the Almighty for the wisdom, strength, and perseverance that made this academic endeavor possible.

9.0 References

Chitsulo, C., Pindani, M., Maluwa, A., & Chilinda, I. (2014). Factors promoting and hindering performance of unit nurse managers at Kamuzu and Queen Elizabeth Central Hospitals in Malawi. Open Journal of Nursing, 4(13), 928–938. https://doi.org/10.4236/ojn.2014.413099

Fanelli, S., Lanza, G., Enna, C., & Zangrandi, A. (2020). Managerial competences in public organisations: The healthcare professionals' perspective. BMC Health Services Research, 20, Article 79. https://doi.org/10.1186/s12913-020-05179-5

Fanelli, S., Pratici, L., & Zangrandi, A. (2022). Managing healthcare services: Are professionals ready to play the role of manager? Health Services Management Research, 35(2), 102–110. https://doi.org/10.1177/09514848211010264

Field, A. (2013). Discovering Statistics Using IBM SPSS Statistics (4th ed.). SAGE Publications Ltd.

Kline, R. B. (2021). Principles and Practice of Structural Equation Modeling (4th ed.). Guilford Press. https://tinyurl.com/4r6bzrsp

Mojar, A. K. S., & Depositario, D. P. T. (2020). An exploratory study on the managerial competencies of first-line managers in a Philippine university. Journal of Economics, Management & Agricultural Development, 6(2), 15–26. https://www.ukdr.uplb.edu.ph/jemad/vol1/iss1/3/

Nguyen, T., Mia, L., Winata, L., & Chong, V. (2021). Effect of transformational leadership style and management control system on managerial performance. Journal of Business Research, 124, 292–304. https://doi.org/10.1016/j.jbusres.2020.11.051

Sison, M., & Rodelas, D. (2024). Management skills, emotional competence and leadership skills of chief radiologic technologists. Journal of Medical Imaging and Radiation Sciences, 55(3), 101601. https://doi.org/10.1016/j.jmir.2024.101601

Taherdoost, H. (2022). A comprehensive review of Cronbach's alpha reliability coefficient: Applications and recent trends. Journal of Research in Technical Careers, 6(1), 1–11. https://doi.org/10.2139/ssrn.3205040

Treglown, L., Cuppello, S., Darby, J., Bendriem, S., Mackintosh, S., Ballaigues, M., MacRae, I., & Furnham, A. (2020). What makes a leader? An investigation into the relationship between leader emergence and effectiveness. Psychology, 11(9), 1295–1310. https://www.scirp.org/reference/referencespapers?referenceid=2833474&utm_source

Wong, J. (2020). Exploring the role of demographics, career development and organizational support to the managerial competence of SUC department heads in MIMAROPA Region Philippines. International Journal of Economics, Commerce and Management, 8(8). https://ssrn.com/abstract=4259737

Yukl, G., & Mahsud, R. (2020). Why flexible and adaptive leadership is essential. Consulting Psychology Journal: Practice and Research, 72(1), 29–44. https://doi.org/10.1037/cpb0000147