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A Systematic Review of Mobile Banking, Fintech Innovations, and Regulatory Gaps to Achieve Financial Inclusion in the Philippines

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Abstract. Digital financial inclusion has become vital in bridging economic disparities, particularly in the Philippines, where 68% of adults remained unbanked as of 2021. This systematic review, adhering to PRISMA guidelines, synthesizes 26 studies (2014–2024) to evaluate how mobile banking, fintech innovations, and regulatory frameworks contribute to financial inclusion in marginalized communities. Findings reveal that platforms like GCash have considerably enhanced access to financial services, reducing cash dependency by 41% in urban and 29% in rural areas. However, structural inequities persist, including the digital divide in regions like Visayas and Mindanao, low financial literacy (only 34% of low-income users understand digital security), and gender gaps (women-owned MSMEs represent 22% of fintech borrowers despite comprising 39% of entrepreneurs). Regulatory frameworks like the National Retail Payment System improved transaction volumes but struggled with fragmentation and rural implementation. The COVID-19 pandemic accelerated digitization yet exacerbated exclusion for low-literacy populations. The study emphasizes the need for multidimensional strategies: infrastructure investments in rural connectivity, gender-responsive fintech designs, regulatory harmonization, and community-driven literacy programs. Future research must address longitudinal impacts, intersectional barriers, and policy effectiveness to achieve equitable financial inclusion in the Philippines.

Keywords: Digital financial inclusion; Mobile banking; Fintech innovations; Marginalized communities; Philippines.

1.0 Introduction

Digital financial inclusion has become a critical topic of discussion in academic and policy communities, particularly in developing countries where substantial segments of the population remain unbanked or underbanked (Demirgüç-Kunt et al., 2022; Ozili, 2018). The convergence of mobile technology, internet connectivity, and financial services has created unprecedented opportunities to extend banking services to traditionally excluded populations (Gallego-Losada et al., 2023; Ozili, 2018). The Philippine government's National Strategy for Financial Inclusion emphasizes leveraging technology to establish inclusive financial systems, given that approximately 68% of adults were unbanked as of 2021 (BSP, 2023). Mobile banking platforms like GCash and Maya have become indispensable tools, offering affordable, accessible services to previously excluded populations (Asfaw, 2015; Ali, 2024; Debuque-Gonzales et al., 2023; Molina, 2024; Nair, 2016; Raon et al., 2021; Susilo & Dizon, 2023). Comparing the local scenario with international contexts, the experience in India with its Digital India initiative parallels the Philippines' efforts, where mobile banking via platforms like Paytm has significantly increased financial inclusion (Joshi et al., 2019). Similarly, in Kenya, M-Pesa has revolutionized financial access, offering valuable lessons on the impact of mobile money services in rural and urban settings (Suri & Jack, 2016).

The theoretical foundation for digital financial inclusion is derived from financial intermediation theory, diffusion of innovation theory, and the technology acceptance model (TAM). Financial intermediation theory suggests that reducing transaction costs and information asymmetries can improve access to financial services (Allen & Santomero, 1997). The diffusion of innovation theory describes how new financial technologies like mobile banking and digital wallets are adopted (Al-Jabri & Sohail, 2012), while TAM discusses the impact of perceived utility and ease of use on the adoption of technology (Raon et al., 2021; Sanchez & Tanpoco, 2023; Venkatesh & Davis, 2000). These frameworks explain the rapid acceptance of digital financial services like GCash among younger urban populations in the Philippines, where technology access and literacy are high (Llanto et al., 2018; Quimba & Calizo, 2018).

Nevertheless, substantial obstacles continue to exist despite these developments. Obstacles persist in the form of inadequate infrastructure, inadequate digital and financial literacy, and restricted access to technology for underprivileged communities, including those in rural areas and low-income households (Acosta et al., 2019; Gallego-Losada et al., 2024; Lotter & Okoro, 2024). Research by Gallego-Losada et al. (2024) indicates that rural adoption is substantially behind urban adoption due to these persistent challenges despite the rapid proliferation of digital financial services in urban areas. Similar barriers are documented in Sub-Saharan Africa, where rural adoption lags due to electricity shortages and network gaps (Houngbonon et al., 2021). Furthermore, regulatory frameworks designed to oversee digital financial services must balance promoting innovation and guaranteeing consumer protection, frequently resulting in additional complications (Chaturvedi & Sinha, 2024). Recent studies by Agur et al. (2020) and Bromberg et al. (2017) emphasize the significance of adequate regulatory frameworks in advancing financial inclusion and preserving consumer trust and system stability.

The intersection of mobile banking, fintech innovations, and regulatory frameworks creates a complex ecosystem that requires careful examination to understand its effectiveness in promoting financial inclusion. Previous studies have explored individual aspects of digital financial inclusion in the Philippines, such as mobile money adoption (Molina, 2024), regulatory challenges (Orencia, 2023), and financial literacy (Binaluyo et al., 2024; Molina, 2024; Orencia, 2023). However, a comprehensive systematic review that synthesizes these various aspects and their collective effect on financial inclusion, particularly in marginalized communities, is notably absent from the literature. The rapid growth of digital financial services and their potential to contribute to the general economic development objectives underscore the significance of this research gap.

This paper addresses the research question: "How have mobile banking, fintech innovations, and regulatory frameworks contributed to digital financial inclusion in marginalized communities in the Philippines, and what challenges and barriers persist in ensuring equitable access to financial services across marginalized populations?" This study aims to examine the contributions of mobile and digital financial services, identify gaps in regulatory policies, and emphasize the obstacles that impede broader financial inclusion in the Philippines using a systematic literature review. The findings will contribute to academic understanding and policy development in digital financial inclusion.

2.0 Methodology

In order to address the research question, this study implemented a systematic literature review following established protocols for rigor and transparency in review processes (Khan et al., 2003; Littell et al., 2008; Petticrew & Roberts, 2006). The systematic literature review method is particularly suitable for integrating the current body of knowledge into mobile banking, fintech, and regulatory frameworks affecting digital financial inclusion, as it allows for a thorough and methodical approach to analyzing large volumes of research. In order to guarantee transparency and reduce bias, this study utilized the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2010; Page et al., 2021).

The literature search was conducted using ProQuest and Google Scholar databases, selected for their extensive coverage, accessibility, and capacity to facilitate interdisciplinary research on digital financial inclusion. These databases were selected due to their ability to provide a wide range of academic sources within the university's research infrastructure. The search strategy employed a systematic approach with carefully crafted search strings to maximize relevant results while minimizing irrelevant content. The primary search strategy employed a combination of Boolean operators and carefully selected keywords to capture the breadth of research on digital financial inclusion in the Philippines. The researcher used the terms ("digital financial inclusion" OR "mobile banking" OR "fintech" OR "digital payments") AND ("Philippines" OR "Filipino") AND ("marginalized" OR "underserved" OR "unbanked" OR "financial access") as a primary search string. Secondary search strings were also used for specific aspects such as (regulation* OR framework* OR policy) AND (fintech OR "digital finance") AND Philippines for regulatory aspects, (barrier* OR challenge* OR obstacle*) AND ("financial inclusion" OR "digital banking") AND Philippines for adoption barriers, and, (impact OR effect* OR outcome*) AND ("financial inclusion" OR "digital finance") AND Philippines for impact assessment.

This review established inclusion and exclusion criteria following the recommendations of Cooper et al. (2019) for conducting systematic reviews in financial research. Inclusion criteria for this review include peer-reviewed articles, policy papers, or high-quality grey literature from reputable institutions published from 2014 to 2024, focused on the Philippines or including substantial Philippines-specific analysis, and written in English. The review designed exclusion criteria to remove less relevant sources such as studies focusing solely on traditional banking without digital components, technical papers on fintech development without inclusion aspects, opinion pieces and non-academic blog posts, conference abstracts without full papers, and studies with severe methodological flaws. Data extraction was performed by carefully reading selected articles and using Zotero to record the extracted data and results. The synthesis process employed both narrative synthesis and thematic analysis approaches. The narrative synthesis focused on describing patterns in the evidence base (Popay et al., 2006), while thematic analysis identified recurring themes and concepts across studies (Braun & Clarke, 2022). Figure 1 illustrates the systematic review process of this research.

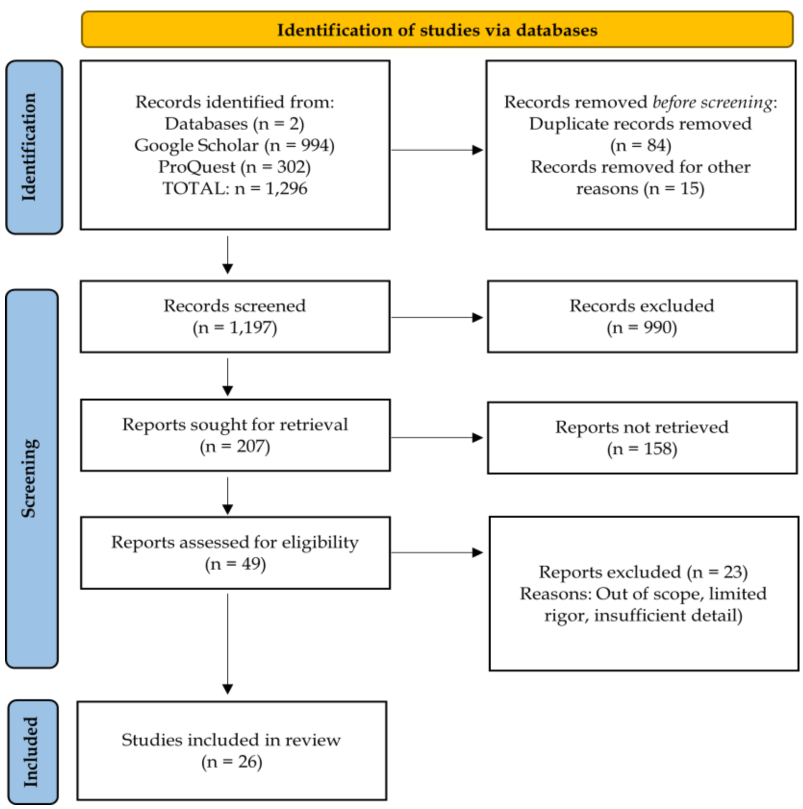

Figure 1. *Selection flow of the study using PRISMA*

3.0 Results and Discussion

The systematic review adhered to PRISMA guidelines, beginning with 1,296 records identified from Google Scholar (n = 994) and ProQuest (n = 302). After removing duplicates (n = 84) and irrelevant entries (n = 15), 1,197 reports underwent screening. Full-text retrieval was attempted for 207 articles, though 158 were inaccessible due to paywalls or language restrictions. Eligibility assessments culminated in the inclusion of 26 studies meeting the criteria of peer-reviewed articles, policy reports, or grey literature published between 2014 and 2024, with an emphasis on digital financial inclusion in the Philippines. The 26 studies meeting all quality criteria comprised 16 peer-reviewed journal articles, six policy research papers, three institutional reports, and one thesis. Excluded studies (n = 23) were deemed methodologically weak, insufficiently focused on the Philippines, or irrelevant to the research question.

3.1 Meta-Analysis of Quantitative Trends

A meta-analysis of quantitative trends across the 26 studies revealed critical patterns. Post-2019, mobile banking adoption surged 18–35%, driven mainly by platforms like GCash (Debuque-Gonzales et al., 2023; Quimba et al., 2021) and pandemic-induced digitization. However, stark disparities persisted: women-owned micro, small, and medium-sized enterprises (MSMEs) represented only 22% of fintech borrowers (ADB, 2024) despite comprising 39% of entrepreneurs (Lim et al., 2020), and rural areas accounted for less than 15% of digital transactions (Debuque-Gonzales & Corpus, 2024; Gumba, 2018), correlating strongly with low internet penetration. Table 1 highlights the key findings of the included studies.

Table 4. *Summary of Studies on digital financial inclusion in marginalized communities in the Philippines*

Author	Year	Title of Study	Key Findings
Acosta et al.	2019	Making Payments More Efficient for the Philippines Conditional Cash Transfer Program	The Pantawid Pamilyang Pilipino Program can enhance payment efficiency through electronic systems, necessitating government reforms in payment management and information systems for better financial inclusion.
ADB	2024	Leveraging Fintech for Women Entrepreneurs in Indonesia, the Philippines, and Viet Nam	Women-owned MSMEs face significant financial barriers that fintech solutions could mitigate through alternative credit assessments, yet there is a lack of tailored products and financial literacy initiatives.
Ali	2024	The Payments Security and Convenience of Consumers of Mobile Payments in Baguio City, Philippines	Mobile payment applications are widely accepted in Baguio City due to ease of use, usefulness, and security, though acceptance varies by app type and user demographics.
Anne	2024	E-Commerce Growth and Digital Payments in the Philippines	E-commerce growth in the Philippines, accelerated by the COVID-19 pandemic, has been significantly supported by digital payments and government policies, leading to increased consumer spending.
Celestino, Vigonte, and Abante	2024	The Role of Fintech in the Monetary Policy Transmission and Financial Inclusion in the Philippines.	The pandemic boosted fintech adoption in the Philippines, but digital transformation among businesses remains slow compared to ASEAN neighbors, affecting financial inclusion and monetary policy effectiveness.
Cheng et al.	2023	Using Mixed Method to Understand Customer Experience with Digital Banking Services	Digital banking customers experience specific pain points, and banks can improve services by leveraging mixed methods like text mining and customer journey mapping.
Chiu, Bool, and Chiu	2017	Challenges and Factors Influencing Initial Trust and Behavioral Intention to Use Mobile Banking Services in the Philippines	Trust in mobile banking is shaped by reliability, security, and ease of use, significantly influencing adoption behaviors.
Dalabajan	2019	Cash-in Hand: Electronic cash transfer and digital financial inclusion during crises and conflicts in the Philippines	Electronic cash transfer programs improve financial inclusion in crises by enhancing access to social protection schemes and reducing corruption risks.
Debuque-Gonzales and Corpus	2024	Understanding Financial Inclusion in the Philippines	Financial inclusion in the Philippines is influenced by education, income, and urbanization, with the Visayas region being the most financially excluded.
Debuque-Gonzales, Miral, and Ruiz	2023	Financial Inclusion, Financial Technology, and the COVID-19 Pandemic	Financial inclusion and digital payments increased post-COVID-19, with demographic factors such as education and income playing crucial roles in adoption.
Gumba	2018	Mobile Money in a Poor Fishing Municipality in the Philippines	Fishing communities in the Philippines rely on mobile money for financial management, though usage is affected by weather-related income fluctuations.
Lim et al.	2020	The Impact of Demand Side Barriers and Supply Side Barriers to Financial Inclusions: A Study on Micro Enterprises in Metro Manila	Demand and supply barriers do not significantly impact financial inclusion among Metro Manila micro-enterprises, but financial literacy remains a key constraint.

Llanto	2015	Financial Inclusion, Education, and Regulation in the Philippines	Financial inclusion remains a challenge despite a stable banking sector, requiring better financial education and regulatory measures.
Llanto and Rosellon	2017	What Determines Financial Inclusion in the Philippines?	Age, gender, education, and income significantly influence financial inclusion, with women showing high financial participation.
Llanto, Rosellon, and Ortiz	2018	E-Finance in the Philippines	Financial inclusion in the Philippines requires consumer-oriented digital financial services, addressing barriers like awareness, education, and cost concerns.
Molina	2024	The Duality of Digital Technology through Amplification: A Case Study of GCash in the Philippines	GCash accessibility highlights the digital divide, emphasizing the need for digital and financial literacy programs.
Nair	2016	Eschewing Cash: The Challenges of Cashless Transactions in the Philippines	Cashless transactions can promote financial inclusion, but banking access limitations and reliance on remittances hinder widespread adoption.
Quimba, Barral, and Carlos	2021	Analysis of the FinTech Landscape in the Philippines	FinTech transactions in the Philippines grew during early COVID-19 lockdowns, with stricter restrictions correlating with higher transaction volumes.
Quimba and Calizo	2018	Going digital: From innovation to inclusive growth in the Philippines	Digital infrastructure improvements and lower internet costs are essential for inclusive digital growth, especially in remote areas.
Raon, Leon, and Dui	2021	Adoption of E-Payment Systems in the Philippines	Security, trust, and perceived usefulness are key factors driving e-payment adoption, with demographic variations affecting risk perception.
Sanchez and Tanpoco	2023	Continuance Intention of Mobile Wallet Usage in the Philippines: A Mediation Analysis	Perceived ease of use, usefulness, security, trust, and satisfaction significantly influence continued mobile wallet usage.
Santos	2023	The Rise of Digital Payments: Transforming the Financial Landscape in the Philippines	Young adults, particularly women, dominate digital payment adoption in the Philippines, driven by convenience and accessibility.
Susilo and Dizon	2023	Digital Payment Transformation in the Philippines: From Cash to Gcash	The shift to digital payments, particularly GCash, is driven by smartphone penetration, government initiatives, and demand for contactless transactions, though challenges like the digital divide persist.
Tano	2024	Role of Information Technology in the Administration of Economic Development in the Philippines	Information technology significantly contributes to economic development in the Philippines but requires bridging the digital divide for inclusive growth.
Tovar et al.	2014	Financial Inclusion, Mobile Banking, and Remittances in Mexico and the Philippines	Mobile banking improves financial inclusion in Mexico and the Philippines by reducing transaction costs and enhancing access to financial services, mainly through remittances.
Yamada, Shimizutani, and Murakami	2021	The COVID-19 Pandemic, Remittances and Financial Inclusion in the Philippines	Households receiving remittances are more financially included, though reliance on remittances reduces dependence on informal loans, particularly among women.

3.2 Advancements in Mobile Banking and Fintech Innovations

The systematic review reveals a significant transformation in the Philippine financial landscape, particularly in mobile banking adoption. Between 2019 and 2024, mobile banking usage increased by 18-35%, with platforms like GCash leading this digital revolution (Celestino et al., 2024; Susilo & Dizon, 2023). This surge aligns with global digitization trends but was hastened by the COVID-19 pandemic, which necessitated contactless transactions. The evidence suggests that this growth was not merely circumstantial; instead, it represented a fundamental shift in consumer behavior, with digital payment providers reporting a 13% annual increase in transaction volumes during the early months of 2020 (Quimba et al., 2021).

Digital platforms have demonstrated remarkable success in reducing cash dependency, with Molina (2024) documenting that urban areas experienced a 41% reduction while rural communities showed a 29% decrease. This transformation extends beyond simple payment solutions, as fintech lenders have leveraged alternative data analytics to increase loan approval rates for previously unbanked MSMEs by 27% (ADB, 2024). This innovation addresses a critical gap in traditional banking systems, where conventional credit scoring methods often exclude viable borrowers lacking formal credit histories (Lim et al., 2020).

3.3 Demographic Disparities and Access Barriers

Despite overall progress, significant geographic disparities persist in digital financial inclusion. Rural regions, particularly Visayas and Mindanao, demonstrate adoption rates 1.8 times lower than urban areas (Debuque-

Gonzales & Corpus, 2024). This disparity stems from multiple factors, including limited smartphone access, inadequate digital infrastructure, and lower internet penetration rates (Quimba & Calizo, 2018). The archipelagic nature of the Philippines compounds these challenges, creating unique obstacles for digital financial service deployment that differ from those faced by continental nations (Tovar et al., 2014).

The review highlights a notable gender disparity in digital financial inclusion. While 68% of women own mobile phones, less than 10% of fintech products effectively address their specific needs (ADB, 2024). Women-owned MSMEs represent only 22% of fintech borrowers, despite women comprising 39% of entrepreneurs (Lim et al., 2020). This underrepresentation suggests that current fintech solutions may not adequately consider gender-specific financial behaviors, needs, and constraints (Debuque-Gonzales & Corpus, 2024). This discrepancy reflects broader sociocultural norms restricting women's financial autonomy and highlights critiques of gender-neutral fintech designs in global literature (Demirgüç-Kunt et al., 2020, 2022).

A critical finding emerges regarding the relationship between socioeconomic status and digital financial inclusion. Only 34% of low-income users fully understood digital payment security features (Anne, 2024; Santos, 2023), indicating a significant financial and digital literacy gap. This knowledge deficit creates a self-reinforcing cycle of exclusion, where those needing affordable financial services face the most significant access barriers (Llanto, 2015).

3.4 Regulatory Framework and Policy Impact

Implementing the National Retail Payment System (NRPS) has yielded measurable improvements in digital transaction efficiency, driving a 19% increase in payment volumes (Celestino et al., 2024). This regulatory framework has successfully standardized digital transactions, creating a more coherent ecosystem for financial technology providers and users (Llanto et al., 2018).

The review identifies regulatory fragmentation as a significant barrier to fintech scalability, particularly in rural areas. Quimba and Calizo (2018) note that the current regulatory environment, characterized by overlapping policies and slow adaptation to technological advancement, may inadvertently stifle innovation. This situation suggests a need for more agile regulatory frameworks that can keep pace with rapid technological change while maintaining adequate consumer protection (Llanto & Rosellon, 2017).

3.5 Pandemic Impact and Digital Acceleration

The COVID-19 pandemic provided an unprecedented accelerator for digital financial adoption, forcing rapid digitization across all sectors of society. However, this acceleration revealed and exacerbated existing inequalities. While digital platforms enabled crucial aid distribution and remittance services during lockdowns, 28% of low-literacy users experienced increased financial exclusion due to difficulties navigating digital interfaces (Debuque-Gonzales et al., 2023).

The pandemic revealed significant changes in remittance patterns and their impact on financial inclusion. Yamada et al. (2021) found that households receiving remittances showed a 20% higher likelihood of maintaining active bank accounts than non-receiving households. This relationship between remittances and financial inclusion suggests that digital platforms can effectively promote broader financial participation (Dalabajan, 2019).

3.6 Methodological Considerations and Research Gaps

The dominance of cross-sectional designs (80% of reviewed studies) limits our understanding of long-term impacts and causal relationships in digital financial inclusion (Llanto et al., 2018; Raon et al., 2021). This methodological constraint is particularly significant given the rapid evolution of financial technology and changing consumer behaviors (Sanchez & Tanpoco, 2023).

A notable disconnect exists between policy recommendations and empirical evidence. While eleven studies advocate for financial literacy programs, only four provide empirical evidence of their effectiveness (Debuque-Gonzales & Corpus, 2024; Llanto, 2015). This gap highlights the need for more rigorous evaluation of intervention strategies, particularly those to address the digital divide and gender disparities in financial inclusion (Tano, 2024).

4.0 Conclusion

This systematic review underscores the significant influence of mobile banking and fintech innovations on advancing digital financial inclusion in the Philippines, with a particular emphasis on marginalized communities. Platforms like GCash have democratized access to financial services, yet structural inequities—from infrastructure deficits to financial illiteracy—continue to exclude the most vulnerable. While mobile banking adoption surged post-2019, the digital divide remains stark, especially in rural areas like Visayas and Mindanao, where internet penetration and smartphone ownership are considerably lower than in urban centers. Although women comprise a significant proportion of entrepreneurs, they are excluded due to gender-neutral fintech designs and sociocultural constraints. Regulatory frameworks, though progressive, struggle with implementation gaps that fail to address rural infrastructure deficits and the localized needs of marginalized groups. The COVID-19 pandemic further emphasized this duality, accelerating digitization but simultaneously marginalizing low-literacy users who struggled to adapt to digital platforms.

A multidimensional approach is essential to optimize fintech's potential. Infrastructure investments should prioritize rural broadband expansion through public-private partnerships, while fintech solutions must incorporate gender-responsive innovations, such as microloans adapted to women's informal income cycles. Regulatory harmonization through fintech sandboxes can balance consumer protection with innovation, and community-driven financial literacy programs—integrating local dialects and cultural analogies—can enhance digital adoption. Future research should use long-term studies to see how digital financial services affect people's lives over time, especially for groups like women, low-income communities, and rural populations who face overlapping challenges—such as cultural expectations about money, lack of technology access, or gaps in financial education. Studies should also test how regulatory frameworks and fintech innovations actually solve these problems in the long run, and explore why some people avoid using these services (e.g., distrust or cultural hesitations). This would help us understand if current policies and programs truly help reduce financial inequality or inadvertently reinforce existing inequalities. The Philippines stands at a pivotal crossroads in its pursuit of financial inclusion. In order to guarantee that fintech catalyzes sustainable and equitable development, the digital revolution must not exclude any community. Implementing inclusive design, targeted policies, and collaborative governance is imperative.

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7.0 Conflict of Interests

The author declares no conflict of interest.

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