

Systematic Literature Insight into Banking Transformation

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Abstract

The banking transformation is necessary to maintain a competitive edge and resilience in a dynamic, technology-driven environment. Despite the growing body of scholarship on this subject, the transformation of banking resilience remains insufficiently understood, particularly in the context of the technology-driven environment. This study examines the key factors that underpin successful digital transformation in the banking sector and evaluates how such transformation contributes to resilience. To achieve this, a systematic literature review was conducted, examining peer-reviewed academic articles published between 2016 and 2025. The findings highlight that successful digital transformation in banking depends on technology readiness, organizational culture, strong leadership support, and a robust regulatory framework, all of which are essential for driving innovation and resilience. By adopting an integrated analytical approach, this research contributes to understanding how banks can address the challenges of digital transformation and improve their resilience.

Keywords: resilience, banking, digital transformation, toe framework, dynamic capabilities

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Abstrak

Transformasi perbankan merupakan kebutuhan strategis untuk mempertahankan daya saing dan ketahanan organisasi dalam lingkungan dengan perkembangan teknologi yang dinamis. Meskipun kajian akademis terkait topik ini terus berkembang, pemahaman tentang ketahanan perbankan dalam bertransformasi masih terbatas, khususnya dalam konteks lingkungan yang berorientasi pada teknologi. Penelitian ini bertujuan untuk mengidentifikasi faktor-faktor kunci yang mendukung keberhasilan transformasi digital di sektor perbankan serta mengevaluasi kontribusinya terhadap peningkatan ketahanan organisasi. Untuk mencapai tujuan ini, penelitian ini menggunakan metode tinjauan literatur sistematis terhadap publikasi ilmiah periode 2016–2025. Hasil penelitian menunjukkan bahwa keberhasilan transformasi digital di sektor perbankan sangat dipengaruhi oleh tingkat kesiapan teknologi, budaya organisasi yang adaptif, dukungan kepemimpinan yang kuat, serta kerangka regulasi yang kokoh. Keempat faktor tersebut berperan penting dalam mendorong inovasi sekaligus memperkuat ketahanan organisasi. Dengan mengadopsi pendekatan analitis yang terintegrasi, penelitian ini memberikan kontribusi dalam memperdalam pemahaman tentang bagaimana bank dapat menghadapi tantangan transformasi digital serta meningkatkan ketahanannya di tengah perubahan lingkungan yang semakin kompleks.

INTRODUCTION

Sustained innovation and the continuous adoption of emerging technologies have fundamentally redefined the banking sector, enabling banks to remain viable and preserve their competitive position within increasingly dynamic, technology-driven environments. The industry has progressively evolved toward digitally integrated frameworks underpinned by technologies such as cloud computing, artificial intelligence, and mobile banking (Kakwani & Naidu, 2024; Teo, 2025). Advanced technology enables banks to offer a comprehensive suite of traditional banking functions 24/7, transform customer experience management in financial services, and drive growth (Adke et al., 2022; Shuaib Ahmed & Kareem, 2025).

A massive transformation driven by advanced technologies has disrupted conventional data management paradigms, offering trust, transparency, and security across diverse domains and redefining how banking and financial services are delivered (Singh & Kant Singh, 2024; Teo, 2025; Vučinić, 2020). On the other hand, digitization activities pose significant threats to banks, including cyberattacks and high operational risks (Ivanova et al., 2020; Probojakti et al., 2025). Banks must integrate innovation as a proactive "fourth line of defense" and adopt a forward-looking approach to risk measurement (Blicq & Carr, 2025; Butler & Brooks, 2024). Banks with strong capital buffers, diversified business models, and strong risk management can perform better in times of crisis than

others (Giese & Haldane, 2020; Vu et al., 2023). Bank resilience should not be limited to financial capability but should also encompass banks actively incorporating, integrating, and utilizing rapidly emerging advanced technologies. Furthermore, the integration of robust regulatory frameworks with digital transformation strategies is foundational to modern banking resilience (Stewart & Chowdhury, 2021; Vučinić, 2020). Notwithstanding this recognition, organizations continue to face substantial challenges in building resilience through digital transformation (Tarigan et al., 2025). Continuous technology adaptation and innovation are essential for banks to maintain their competitive advantage in a dynamic environment and reduce systemic risk (Jia & Liu, 2023; Probojakti et al., 2025).

While the technical dimensions of digital transformation have been extensively studied across non-banking sectors, the long-term implications for institutional resilience in banking remain an open question in the academic literature. An integrated analytical lens that accounts for contextual drivers of technology adoption, as well as the dynamic capability-based processes through which organizations convert technological investment into durable competitive advantage, is therefore required. To address this gap, the primary objective of this study is to identify the key factors influencing successful technology adoption and to understand how these strategies enhance organizational resilience.

RESEARCH METHOD

This research employs a Systematic Literature Review (SLR) as its primary methodology to investigate the correlation between digital transformation and banking resilience, drawing on the TOE framework and Dynamic Capabilities Theory. Comprehensive analyses were conducted in accordance with PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, using peer-reviewed journal articles published between 2016 and 2025.

Data analysis methods

The analysis in this study used theory-based narrative synthesis rather than quantitative meta-analysis. Each study was categorized according to the nature of the effect (positive, unfavorable, mixed, or null) across three fundamental dimensions of digital transformation and banking resilience, based on factors such as levels of technology adoption, the implementation of digital strategies, and the adoption of transformation initiatives. To facilitate comparability, outcomes were normalized into three categories: technology adoption (the incorporation of AI, Blockchain, cloud computing, and big data); organizational change (preparedness, managerial engagement, and workforce flexibility); and the external environment. The analysis then traced a causal pathway linking digital transformation to bank resilience, supported by dynamic capabilities. (sensing, seizing, and transforming). To ensure a comprehensive search in order to address primary objective of this study, the query strings used are

as follows:

("digital transformation" OR "digital change" OR "digital innovation" OR "digital evolution") AND KEY ("bank" OR "banking" OR "financial institution" OR "financial services") AND ALL ("TOE framework" OR "technology-organization-environment" OR "technology adoption" OR "adoption model") AND ALL ("dynamic capabilities" OR "capability theory" OR "adaptive capacity" OR "organizational agility").

The inclusion and exclusion criteria for this study are as follows: First, the context focuses on studies specifically related to the banking and financial institutions, excluding other sectors. Second, the theme centers on research addressing digital transformation, with a focus on technology, organization, environment, and dynamic capabilities; studies that do not cover these aspects will be excluded. Third, the timeframe for inclusion is limited to articles published between 2016 and 2025, while those published before 2016 will be excluded. Lastly, only peer-reviewed academic articles will be considered; non-academic publications will be excluded.

RESULT AND DISCUSSION

The systematic literature review was identified from theme-related academic literature in Scopus (n = 548) and time-filtered to the last 10 years with no age exclusions. Exclusions were made at this stage for records with closed access (n = 304), non-article types (n = 14), language limitations (n = 26), and records not at the final publication stage (n = 8). As a result, 196 articles were then sought for full-text retrieval. In the next stage, 163 articles were excluded because they were only available in abstract form. After further screening, 33 articles were deemed eligible. Four exclusions were made for reasons such as an irrelevant focus after a full read, unclear methodology, or failure to address the research question directly. The final evidence base comprised 29 articles. Those articles included in the study outline the multifaceted aspects of technology infrastructure, organizational culture, regulatory frameworks, and market dynamics that directly impact digital transformation and organizational resilience.

A systematic literature review of 29 articles synthesizes evidence on how digital transformation affects bank resilience. The previous studies indicate that integrating technologies such as AI, big data, blockchain, and cloud computing can improve operational efficiency, customer engagement, and strategic agility, ultimately enhancing financial stability and competitiveness. However, digital transformation alone is insufficient without organizational readiness and a conducive regulatory environment, underscoring the need for integrated strategies to navigate technological and market disruptions.

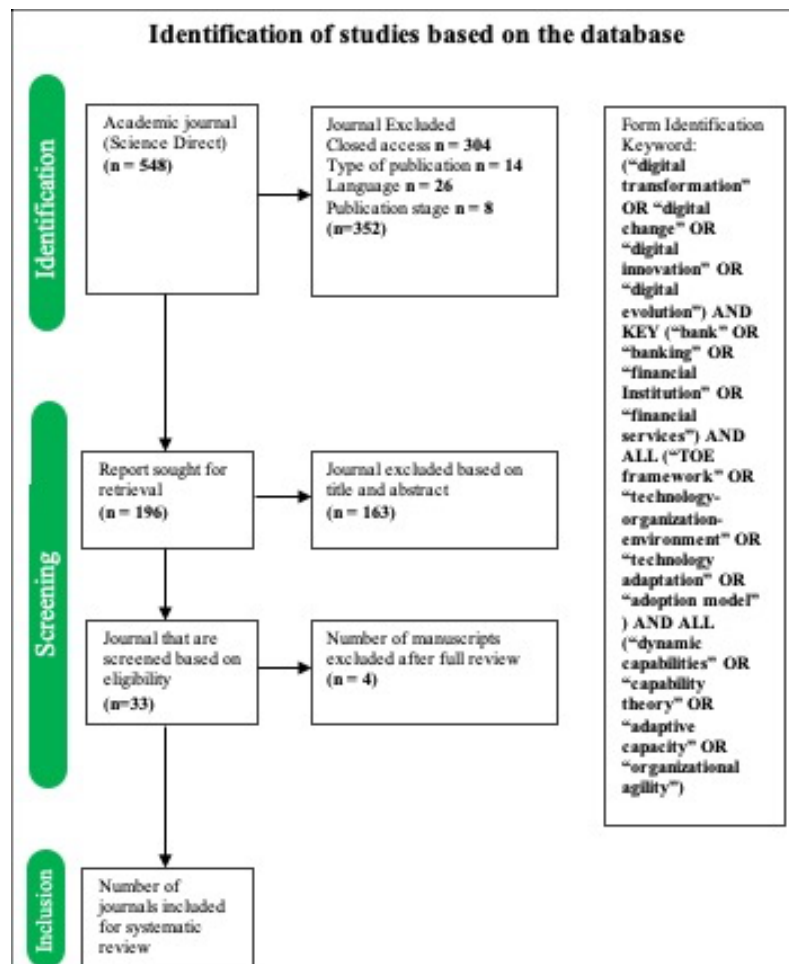


Figure 1. PRISMA Flowchart
Source: Deisnasari et al. (2026)

Dynamic Capabilities and Banking Resilience

Digital transformation plays an important role in enhancing the resilience of bank organizations by improving their ability to adapt and navigate volatile environments. This transformation allows banks not only to survive disruptions such as the COVID-19 pandemic but also to build a sustainable competitive advantage by effectively managing risks and responding to market changes (Arias-Pérez et al., 2023; Juliana et al., 2024). Banks need to align their business models with the shift towards digital systems to remain competitive and achieve sustainable growth in a digital-first economy (Sultanova et al., 2024).

The ability to identify opportunities and treat them is a core component of effective digital innovation management. The ability of banks to respond quickly to market changes, regulatory shifts, technological advancements, and customer preferences is critical to digital transformation (Neiroukh & Çağlar, 2025). Understanding and anticipating customer reactions and market changes is crucial for growth. The rapid rise of digital channels and customer interaction models requires banks to innovate their customer engagement strategies (Amelda et al., 2021; Dehnert, 2020). Market competition from fintechs forces banks to adopt digital technologies to enhance efficiency and the

customer experience, thereby accelerating digital transformation (Baffour Gyau et al., 2024; Nurfadilah et al., 2023). To navigate this landscape, banks must continuously scan for new technologies, market trends, and regulatory shifts to maintain a competitive edge (Amelda et al., 2021; Higgs & Botha, 2025; Nurfadilah et al., 2023)

Strengthening resilience, digital technologies can provide banks with the agility needed to respond to disruption. Technology and ecosystem capabilities have a positive and significant impact on digital transformation and innovation, including in Accounting Information Systems and business (Abdurrahman, 2024; Horani et al., 2023; Qatawneh & Al-Okaily, 2024). Predictive AI modeling can assess the impact of market fluctuations and regulatory changes, allowing banks to adjust their strategies accordingly (Ali & Aysan, 2025). The use of advanced technology allows banks to remain competitive and adaptive in the face of continuous disruptions, including accelerating financial inclusion, streamlining processes, and lowering operational costs, contributing to a more robust and agile banking system.

Banks undertake digital transformation for various purposes, including improving risk management, strengthening resilience, or enabling real-time decision-making. Digital technology is used in risk management to perform proactive risk detection and mitigation, such as bad-debt assessment and fraud detection. Technologies not only optimize efficiency and risk management but also reinforce the banking sector's capacity to thrive amid market uncertainties and regulatory challenges (Zaid et al., 2024). Blockchain technology improves financial infrastructure and bank stability (Hassan et al., 2025). Leveraging AI, Big Data, and Blockchain expands financial services, reduces costs, and increases efficiency, while improving decision-making, automating processes, and crafting data-informed strategies, thereby enhancing competitiveness and profitability (Ali & Aysan, 2025; Felipe et al., 2025; Zaid et al., 2024).

Creating adaptive frameworks within banking organizations is essential to successfully harnessing digital opportunities, integrating forward-thinking technologies, and securing long-term growth in the evolving financial sector. Digital transformation in commercial banks is driven by the integration of artificial intelligence and blockchain, which plays a key role in improving bank performance by enabling secure, transparent transactions and adapting to regulatory change (Felipe et al., 2025). It highlights that dynamic capabilities enhance banking processes by improving credit decisions, enhancing operational efficiency, and improving customer experiences, thereby encouraging marketing innovations and aiding digital adaptation (Ali & Aysan, 2025; Ogunrinde et al., 2025).

Digital innovation management and dynamic capabilities are used to overcome market challenges and integrate new technologies, thereby maintaining competitiveness (Higgs & Botha, 2025). Al-Nimer (2024) discusses how dynamic capabilities in the digital business ecosystem drive business growth and innovation. Banks with strong dynamic capabilities are better positioned to manage

technological change, innovate, and remain competitive in the rapidly changing digital economy (Zaid et al., 2024). By balancing financial inclusion with the risks inherent in digital finance, banks are leveraging dynamic capabilities to enhance competitiveness while maintaining financial stability (Hassan et al., 2025). Dynamic capabilities enable banks to support entrepreneurship, innovation, and credit access, and to improve investment opportunities and bank competitiveness (Engku Abdullah et al., 2025; Ključnikov et al., 2025).

Digital Transformation

The banking industry, characterized by a long-standing business model, is currently facing increasingly complex and evolving uncertainties. The banking industry faces not only many growth opportunities that could enhance its market position but also significant threats that could undermine its operational stability and overall sustainability. This systematic literature review highlights a central message across the 29 studies, offering banks guidance on navigating the complexities of digital transformation.

With respect to technology integration, the literature consistently indicates that advanced technologies improve banking operational efficiency, enhance customer experience, and yield substantive market insights, thereby enabling institutions to sustain competitive positioning within rapidly evolving environments (Ali & Aysan, 2025; Horani et al., 2023; Ogunrinde et al., 2025).

With respect to organisational culture, leadership commitment is essential for cultivating an institutional culture that embraces change and supports innovation. Strong senior management engagement is identified across multiple studies as a prerequisite for successfully advancing digital initiatives, including through the articulation of a coherent vision for transformation, its alignment with the bank's strategic objectives, and the allocation of sufficient resources to ensure effective implementation (Bany Mohammed et al., 2024; Elnaggar et al., 2025; Higgs & Botha, 2025).

With respect to organisational readiness, banks must systematically assess and strengthen their institutional preparedness for banking transformation, which involves investment in technological infrastructure, alignment of technology capabilities with organisational strategy, and ensuring that adequate human resource capacity exists to support the effective deployment of new technologies (Panday et al., 2024; Shoaee et al., 2022). The literature also found that banks must prioritise enhancing employees' competencies in data analytics and technology management to improve institutional productivity and innovation capacity. Investment in training and continuous professional development is recognised as essential for building the digital skills required across the workforce (Engku Abdullah et al., 2025; Nurfadilah et al., 2023; Panday et al., 2024; Zaid et al., 2024).

With respect to competitive dynamics, banks must adapt their service offerings and operational strategies in response to the intensifying competition from fintech providers, ensuring that they

effectively address evolving market demand (Baffour Gyau et al., 2024; Felipe et al., 2025; Panday et al., 2024). Banks must also maintain a proactive orientation toward regulatory developments, supporting innovation while ensuring adherence to applicable standards to mitigate the risks associated with deploying digital technologies (Ali & Aysan, 2025; Kenfang Wambe, 2024; Ogunrinde et al., 2025).

Theoretical Contribution: Integrated Banking Digital Resilience Framework

Based on the synthesis of 29 studies, this review proposes an Integrated Banking Digital Resilience Framework. From the TOE Framework, it was found that the drivers of digital transformation are Technology, Organization, and Environment, while the Dynamic Capability theory explains the transformation mechanism (Sensing, Seizing, and Transforming).

This framework illustrates how technology, organizational, and environmental contexts influence digital transformation initiatives. Through the development of dynamic capabilities (sensing, seizing, and transforming), banks can strengthen its operational, financial, and strategic resilience, ultimately achieving sustainable competitive advantage.

The framework shows that digital transformation alone is insufficient to create resilience. Instead, resilience emerges when technology investments are translated into organizational capabilities through a dynamic capability process.

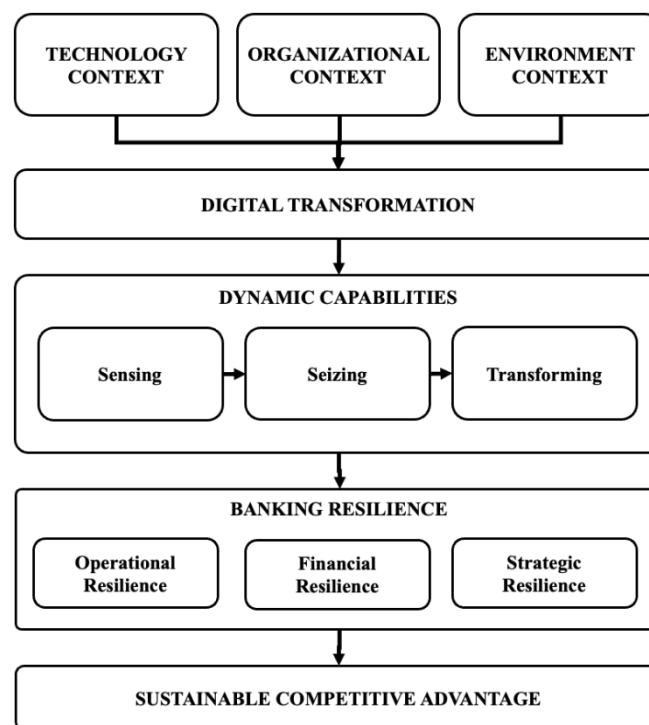


Figure 2. Integrated Banking Digital Resilience Framework

Source: Deisnasari et al. (2026)

CONCLUSION

Resilience is becoming increasingly important amidst the uncertain environment that continues to expose the vulnerabilities inherent in traditional banking models. It is therefore important for banks to formulate resilience strategies that are robust, adaptive, and forward-looking. The study highlights that the significant organizational traits, such as management support, organizational readiness, and talent management, are also key to achieving an effective digital strategy. Lastly, aligning digital transformation with organizational strategies should also be prioritized to enhance banks' resilience.

Theoretically, this study contributes to the banking transformation literature through Integrated Banking Digital Resilience Framework. This framework integrating the TOE framework and Dynamic Capabilities Theory into unified explanation of how digital transformation enhances banking resilience. The proposed framework suggests that technological, organizational, and environmental factor serve as key antecedents of digital transformation, while dynamic capabilities act as the mechanism through which digital investments translate into resilience outcomes.

Practically, this framework provides strategic guidance for bank executives, digital transformation leaders, and regulators in designing transformation initiatives that embrace technology adoption and focus on developing organizational agility, innovation capabilities, and adaptive resilience.

Despite these contributions, this study has several limitations. First, it relies on articles indexes in Scopus between 2016 and 2025, and has not been captured relevant information from other databases such as industry reports, policy papers, and practitioner-oriented publications. Second, the reviewed studies largely provide conceptual or cross-sectional perspectives, thus limiting the ability to establish causal relationships between digital transformation initiatives and long-term organizational resilience. A further limitation is this study did not conduct a descriptive analysis of the existing literature. Therefore, it cannot capture the development of research on this topic in a specific context. Therefore, further research could conduct a descriptive analysis of the existing literature. A final limitation is that the study does not differentiate between banking segments, such as digital-only banks, Islamic banks, regional banks, and large commercial banks, which may experience digital transformation and resilience-building processes differently.

Further research that can be conducted in the future is empirical validation of the Integrated Digital Banking Resilience Framework resulting from this study. This framework can be empirically tested using Structural Equation Modeling (SEM). In addition, further research can focus on comparative studies, such as comparing conventional banks and digital banks, or comparing banks based on their size.

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