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FROM DIGITAL TRANSFORMATION TO SUSTAINABLE PERFORMANCE: THE ROLE OF GOVERNANCE, RISK MANAGEMENT, AND COMPLIANCE IN FINANCIAL INSTITUTIONS

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Abstract
Widespread adoption of digital technology within financial institutions provides them with new opportunities that may help in achieving sustainability. Unfortunately, these opportunities also come with increasing challenges related to operational disruptions, new emerging risks, and complexities of regulations. As digital technologies become more embedded in business processes, understanding the role of governance, risk management, and compliance (GRC) becomes more crucial. This study examines how these mechanisms support financial institutions in balancing innovation and sustainability during digital transformation by employing a thematic literature review guided by the PRISMA 2020 framework. The review process began with 338 records from Scopus database and after a series of screening and eligibility stages, 16 articles were extracted for final analysis. The findings show that digital transformation is generally associated with improved organizational performance, innovation capability, and resilience. However, the literature also highlights emerging risks arising from greater technological dependence and increasing cybersecurity concerns. Across the reviewed studies, governance consistently appears as an important factor in shaping how organizations manage these opportunities and risks. The analysis further suggests that governance, risk management, and compliance work most effectively when viewed as complementary capabilities rather than separate functions. Based on these findings, this study proposes a digital GRC perspective that illustrates how integrated GRC practices can support resilience and sustainable performance in financial institutions undergoing digital transformation.
Keywords: *Digital Transformation, Governance, Risk Management, Compliance, Financial Institutions*

INTRODUCTION

Financial institutions is experiencing unprecedented transformation driven by rapid technological advancement (Amoakohene et al., 2025). Emerging technologies such as Artificial Intelligence (AI), cloud computing, big data analytics, blockchain, and digital platforms catalysts fundamental changes on how financial institutions operate, compete, and deliver value. Consequently, digital transformation cannot longer be considered solely as a technological initiative, rather, it has become a strategic necessity for organizations to remain competitive in an increasingly dynamic and technology-driven markets (Robu & Lazar, 2021).

As organizations become more dependent on digital technologies, concerns that relates to cybersecurity threats, operational disruptions, data privacy, and regulatory compliance continues to become more relevant (Melnyk et al., 2025;

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Ranjan et al., 2023). Digitalization creates value by enabling more opportunities for innovation. However, like a double-edged sword, it also exposes organization to new threats. Hence, financial institutions are inevitably challenged by the needs to balance innovation and risks (Burga-Mori et al., 2024; Sukawati & Sudiro, 2025).

As a way to address these challenges, more organizations are focusing in governance, risk management, and compliance (GRC) functions. Traditionally viewed as mechanisms for oversight and control, GRC are now expected to support strategic decision-making and improve organizational adaptability (Papazafeiropoulou & Spanaki, 2016). According to Ahmed et al. (2024), effective governance provides organization with more flexibility, promotes innovation and improve responsiveness which are especially crucial in digital landscape.

Despite growing body of literature on digital transformation and GRC, existing studies remain fragmented across disciplinary boundaries. Many scholars examine technological adoption, fintech innovation, cybersecurity, or sustainability independently, offering limited insight into how these elements interact within financial institutions. Thus, there remains a need for a more integrated understanding of how organizations manage opportunities and risks arising from digital transformation.

In addressing this gap, this study conducts a thematic literature review of academic articles published between 2021 and 2026 to answer the following research questions: ***How do governance, risk management, and compliance mechanisms enable financial institutions to balance innovation and sustainability during digital transformation?***

By synthesizing recent evidence, this study proposes a digital GRC perspective that explains the role of governance, risk management, and compliance in supporting sustainable digital transformation, specifically in financial institutions.

METHOD

Search Strategy

The data collection was conducted on Scopus database in June 2026. Scopus was selected as the source of information because it provides comprehensive coverage of peer-reviewed publications in business, management, accounting, finance, and information systems domain.

The search strategy was designed to collect studies related to governance, risk management, compliance, and digital transformation in financial instituriions. The following search string was used:

("enterprise risk management" OR ERM OR "corporate governance" OR compliance)
AND
("digital transformation" OR digitalization)
AND
(bank OR insurance OR fintech OR "financial institution")*

The search was limited to English-language publications published between 2021-2026 to ensure currency.

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Study Selection

The article selection process followed four stages adapted from the PRISMA 2020 framework consist of identification, screening, eligibility assessment, and inclusion stages.

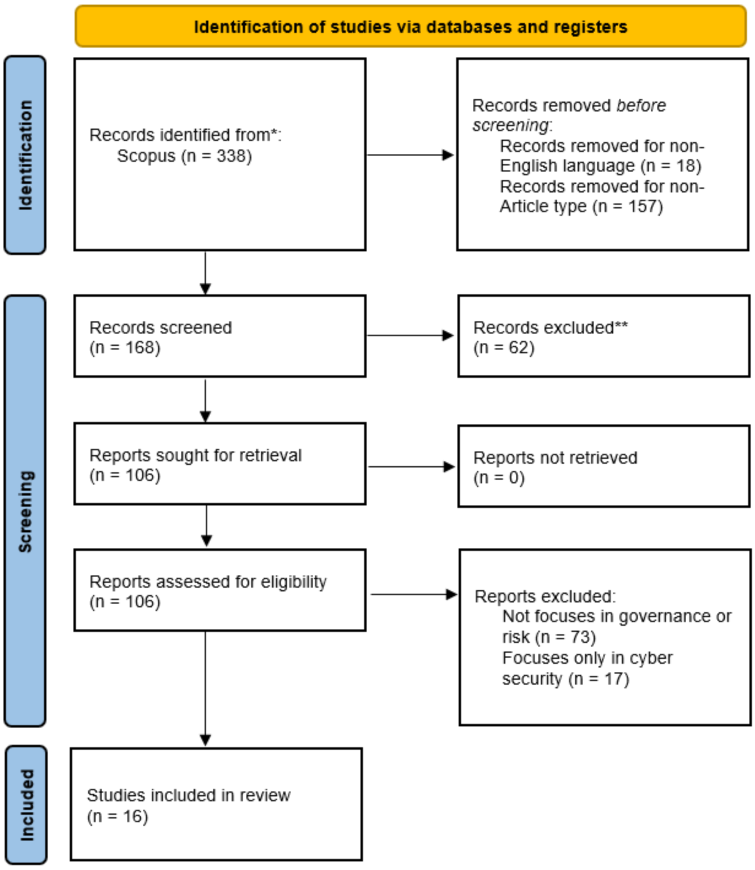

Figure 1 PRISMA 2020 Flow of Systematic Review

338 records were identified in the initial search. Pre-screening were conducted by limiting the result into English-language publication within 2021 and 2026 period that resulted into 320 articles. Restricting the document type to journal articles reduced the number of records to 163. Subsequently, the subject areas were limited to "Business, Management and Accounting" and "Economics, Econometrics and Finance", resulting in 106 articles.

Table 1 Inclusion and Exclusion Criteria

Criterion	Inclusion Criteria	Exclusion Criteria
Publication Period	Between 2021 and 2026	Before 2021
Language	English	Languages other than English
Document Type	Peer-reviewed journal articles	Conference papers, book chapters, editorials, reviews, and other non-article publications
Subject Area	Business, Management and Accounting; Economics, Econometrics and Finance	Subject areas unrelated to business, finance, management, or economics

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Industry Focus	Banking, insurance, fintech, and other financial sectors	Healthcare, manufacturing, engineering, education, smart cities, or other non-financial sectors
Research Topic	Studies addressing digital transformation, digitalization, governance, risk management, compliance, sustainability, resilience, or related concepts within financial services	Studies focusing solely on technical system development, software design, or technology implementation without governance, risk, compliance, or managerial implications
Relevance	Provide evidence relevant to the relationship between digital transformation and GRC in financial sectors	Limited relevance after title, abstract, and full-text screening
Accessibility	Full-text articles available for review	Articles with inaccessible full texts

The remaining articles underwent title and abstract screening to evaluate their relevance to digital transformation, governance, risk management, compliance, and financial services. Studies focusing primarily on technical system development, engineering application, or sectors outside financial services were excluded.

The full texts of the remaining articles were then assessed against the inclusion criteria. For the analysis stage, 16 articles were retained with the purpose of conducting thematic analysis. Table 1 presents specific criteria that were used to ensure only relevant articles continue to analysis phase.

RESULT AND DISCUSSION

The result of thematic analysis of the selected literatures show that digital transformation in financial institutions extends beyond just merely technological adoption. The selected studies consistently demonstrates that the outcomes of digital transformation are strongly influenced by governance arrangements, risk management capabilities, and compliance practices. Three distincts themes emerged from the analysis, namely digital transformation as a driver of organizational performance and resilience, governance as the critical enabler of sustainable digital transformation, and the emerging risk paradox associated with digitalization.

Table 2 Summary of Reviewed Studies

No	Author(s)	Country/Context	Main Findings
1	Iuga (2025)	European Union (27 Member States)	Significant role of governance quality in facilitating digital financial technology adoption.
2	Hu, Chen, Tu (2025)	China (Non-Financial Listed Companies)	Directors and officers liability insurance (D&O Insurance) and cybersecurity governance positively influence

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			sustainable development capability.
3	Birindelli et al. (2026)	European Union (Listed Banks)	Corporate governance mechanisms strengthen the positive effect that alliance have on bank's financial performance.
4	Wagan & Sidra (2024)	Japan (Nikkei Index Firms)	Digital transformation increases firm's willingness to undertake risks, particularly in non-state-owned enterprises.
5	Al-Okaily & Al-Okaily (2025)	Jordan (Financial Market Firms)	Digital orientation and capability support digital transformation, which in turn promotes financial innovation and strengthen firm resilience.
6	Sringam & Wuttidittachotti (2026)	Thailand (Financial Sector)	Strong compliance and maturity levels may conceal underlying inefficiencies in risk management practices.
7	Betancourt et al. (2026)	Colombia (Financial Ecosystem)	Effectively managed digital transformation, cybersecurity, regulatory change, and technological innovation can strengthen banks resilience and competitiveness.
8	Umbet et al. (2025)	International (Advanced, emerging, and developing economies)	Stronger digital governance, effective it audit frameworks (i.e., COBIT) and anti-corruption measures are associated with higher tax performance.
9	Pushp et al. (2026)	India (Banking Sector)	Business risk escalates beyond a certain threshold of competition as technology investment rises, largely due to cybersecurity threats and system dependencies.
10	Dinh & Thanh (2024)	Vietnam (Commercial Banks)	Law enforcement and corporate governance have a direct positive impact on risk control and management. While digital transformation

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			does not directly influence risk management, it has an indirect impact mediated by law enforcement.
11	Bhatti & Pardaev (2025)	Saudi Arabia (Banking Sector)	Fintech adoption significantly improves bank performance, particularly when supported by effective governance frameworks and robust technological capabilities.
12	Siswanti et al. (2024)	Indonesia (Islamic rural banks)	Digital transformation promotes sustainable business outcomes both directly and indirectly through improved financial performance.
13	Luo, Yip, & Brooks (2025)	China (A-share listed companies	Digital finance contributes positively to ESG outcomes by strengthening social performance and corporate governance.
14	Huo, Wang, Miao (2026)	China (Listed Commercial Banks)	Managerial myopia hinders digital transformation by reducing proactive risk-taking. Improved governance and bank scale can mitigate this negative impact.
15	Nguyen & Do (2025)	Europe (Major Financial Institutions)	Fintech adoption significantly improves regulatory liquidity compliance (LCR/NSFR), but high ESG commitments can weaken this effect due to resource allocation conflicts.
16	Yu & Liu (2025)	China (Commercial Banks)	Digital transformation significantly reduces risk-taking levels by enhancing asset operational efficiency and guiding overall digital development.

ANALYSIS AND DISCUSSION

Digital Transformation as a Driver of Performance and Resilience

The first theme highlights the strategic value of digital transformation within financial institutions. As seen on Table 2, there are various association of digital

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technology with an improved operational efficiency, enhanced financial performance, and even achieved sustainable business outcome.

Several studies report that digital transformation contributes directly to organizational competitiveness. In Saudi Arabia, improvement on bank performance was influenced by fintech adoption, particularly when supported by adequate technological infrastructure and governance arrangements (Bhatti & Pardaev, 2025). Similar findings were reported in Indonesia, where digital transformation positively influence both financial performance and sustainable business outcomes (Siswanti et al., 2024).

In addition to improving financial performance, digital transformation was also found to improve organizational resilience in Jordanian firms through digital capability and financial innovation (Al-Okaily & Al-Okaily, 2025). Moreover, Wagan & Sidra (2024) demonstrated that digital transformation enhances firms' willingness to undertake strategic risks and pursue investment opportunities.

Collectively, these findings suggest that digital transformation should not be viewed merely as a technological initiative. On the contrary, it represents a strategic capability that enables organizations to improve performance, adapt to environmental changes, and sustain long-term growth.

Governance as the Critical Enabler of Sustainable Digital Transformation

The second theme focuses on the central role of governance in shaping digital transformation outcomes. While digital technologies create opportunities for innovation, the reviewed studies consistently indicate that governance plays a critical role in determining whether or not those opportunities translate into sustainable organizational benefits.

Governance influences digital transformation through multiple mechanisms, including strategic oversight, leadership commitment, accountability structures, and regulatory enforcement. Iuga (2025) identified governance quality as one of the strongest determinants of internet banking adoption within European Union member states. Another study by Dinh & Phan Thanh (2024) found similar finding in Vietnamese context in a sense that corporate governance also play a part in improving risk control and management effectiveness.

The importance of governance is also evident in studies examining sustainability outcomes. Hu et al. (2025) demonstrated that cybersecurity governance contributes to sustainable development. In alignment, Luo et al. (2025) found that digital finance improves ESG performance primarily through governance-related mechanisms. These findings indicate that governance serves as the bridge connecting digital transformation initiatives with broader organizational objectives.

On that account, governance should not be understood solely as a control function. Instead, it acts as an organizational capability that enables institutions to balance innovation, accountability, and long-term sustainability.

The Emerging Risk Paradox of Digital Transformation

The third theme reveals a more nuanced relationship between digital transformation and risk, in a sense that although digital technologies create value, they also introduce new vulnerabilities and forms of uncertainty.

Several studies highlight growing awareness with regards to cybersecurity threats, operational dependencies, and technology-related risks. For instance, Pushp et al. (2026) indicate increasing business risks as IT investment rises due to cybersecurity threats and system dependencies. Similarly, Sringam & Wuttidittachotti (2026) introduce a “Protection Paradox” that can be defined as excessive security controls that reduce organizational readiness and flexibility.

Nonetheless, different perspectives about the association between digital transformation and risk were found across analyzed literatures on this study. Wagan & Sidra (2024) reported that organizational risk-taking capability increases following digital transformation which then translates into increasing interests in innovation and investment opportunities. Contrarily, Yu & Liu (2025) argue that digital transformation in fact reduces bank’s risks by improving operational efficiency and strengthening governance mechanisms. These seemingly contradictory findings suggest that digital transformation does not inherently increase or decrease risk, but instead its impact depends largely on the quality of governance arrangements, organizational capabilities, and risk management practices.

These findings support the notion that consider governance as the central mechanisms connecting digital transformation, risk management, and sustainable outcomes. While technology provides the means for innovation, governance determines how organizations manage the opportunities and vulnerabilities created by digitalization.

Developing an Integrated Digital GRC Perspective

Building upon the thematic analysis performed, this study attempts to construct a digital GRC perspective that illustrates how governance, risk management, and compliance interact within digitally transforming financial institutions. As opposed to viewing these aspects separately, the framework provided on Figure 2 positions GRC as complementary organizational capabilities that facilitates balancing of innovation opportunities and emerging risks within institutions.

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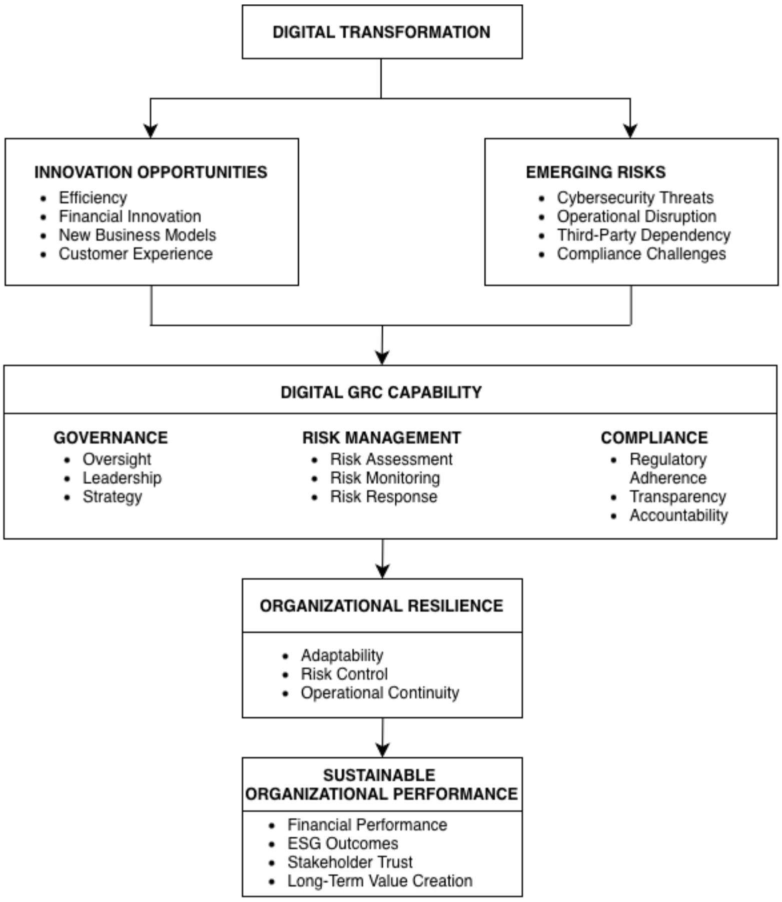

Figure 2 Proposed Digital GRC Perspective

As seen of Figure 2 above, digital transformation generates opportunities while simultaneously exposing organization to new vulnerabilities. On one hand, digital technologies improve operational efficiency, support financial innovation, enhance customer experience, and contribute to organizational performance (Bhatti & Pardaev, 2025; Siswanti et al., 2024). On the other hand, increasing digital dependence exposes organizations to cybersecurity threats, operational disruptions, technology-related risks, and regulatory challenges (Pushp et al., 2026; Sringam & Wuttidittachotti, 2026).

The framework on Figure 2 also states that governance, risk management, and compliance should not be considered separately, but instead as an integrated capability that helps organizations navigate pressures from evolving emerging risks. Governance provides strategic direction and accountability, risk management identify and manage emerging uncertainties, while compliance ensures that digital initiatives remain aligned with regulatory mandates and stakeholder expectations. Rather than serving independently, these functions appear to reinforce one another in supporting organizational adaptation.

A recurring finding across the reviewed studies is that governance plays a particularly important role in shaping transformation outcomes. Governance quality influences technology adoption (Iuga, 2025), strengthens risk control mechanisms (Dinh & Phan Thanh, 2024), and supports sustainability performance through improved oversight and accountability (Hu et al., 2025; Luo et al., 2025). These findings suggest that governance serves as a bridge between digital transformation initiatives and broader organizational objectives.

The framework further suggests that resilience represents an important intermediate outcome. Organizations that successfully integrate GRC capabilities appear to be more equipped in facing disruptions, responding to uncertainty, and maintaining operational continuity. Evidence from Jordan and China indicates that digital capability and governance arrangements contribute to organizational resilience through improved adaptability and operational effectiveness (Al-Okaily & Al-Okaily, 2025; Yu & Liu, 2025).

Ultimately, resilience supports sustainable organizational performance. Across the reviewed studies, sustainability outcomes are reflected not only in financial performance but also in ESG performance, stakeholder trust, transparency, and long-term valuation creation. Therefore, the proposed digital GRC perspective suggests that sustainable performance is achieved not through digitalization alone, but through the effective integration of governance, risk management, and compliance within digital transformation strategies.

CONCLUSION

This study analyze the role of governance, risk management, and compliance (GRC) mechanisms in facilitating digital transformation within financial institutions. The result suggests that successful digital transformation is highly associated with an improved operational efficiency, enhanced organizational performance, and resilient business that may also leads to sustainable outcomes. These outcomes can be achieved with the help of GRC mechanisms that may act as a bridge that helps organization in balancing innovation opportunities and emerging risks.

Based on these findings, this study proposed a digital GRC perspective that may help organization by providing a more appropriate lens for understanding how organization can align digital innovation with effective oversight, risk resilience, and regulatory compliance in achieving sustainable value creation. The proposed framework also strives to contributes to the literature by integrating different aspects that are often considered separately to have a more holistic view for the organization.

Nonetheless, several limitations can be found on this study which includes the use of Scopus as a sole source of data analyzed and the scope of the study which only focuses on financial services sector. Although this approach helps in obtaining a deep understanding on the context of financial institutions, it limits the generalizability of the findings to other industries.Future research may expand the scope by incorporating additional top-tier databases, conducting sector-specific reviews, or empirically testing the relationships proposed in the digital GRC perspective.

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