

THE ROLE OF PEER-TO-PEER LENDING AND DIGITAL TRANSFORMATION IN ENHANCING RURAL BANK PERFORMANCE: EVIDENCE FROM A SYSTEMATIC LITERATURE REVIEW

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Abstract

The rapid advancement of financial technology (fintech), particularly peer-to-peer (P2P) lending, alongside digital transformation, has significantly reshaped the banking industry, including rural banks (BPR). This study aims to systematically review the impact of P2P lending and digital transformation on rural bank performance, with Good Corporate Governance (GCG) as a moderating variable. This research employs a Systematic Literature Review (SLR) approach using the PRISMA framework. A total of 120 articles were identified from Google Scholar, SINTA, and Scopus databases published between 2017 and 2025. After screening and eligibility processes, 40 articles were selected for in-depth analysis. The findings indicate that digital transformation has a positive effect on bank performance, particularly in improving efficiency and financial inclusion. Meanwhile, P2P lending shows mixed effects, acting both as a competitor and a strategic partner. Furthermore, GCG is identified as a critical moderating factor that strengthens the relationship between digital transformation and bank performance. This study contributes by integrating fintech, digital maturity, and governance perspectives in rural banking.

Keywords: P2P Lending, Digital Transformation, Rural Bank, GCG, SLR

INTRODUCTION

The rapid advancement of financial technology (fintech) has significantly transformed the global financial landscape, particularly within the banking industry. Among the most disruptive innovations is peer-to-peer (P2P) lending, which enables direct financial intermediation between lenders and borrowers through digital platforms without relying on traditional banking institutions. This phenomenon has gained substantial traction in both developed and emerging economies, including Indonesia, where financial inclusion remains a critical issue. The emergence of P2P lending has introduced both opportunities and challenges for conventional banking institutions, particularly rural banks (Bank Perkreditan Rakyat – BPR), which traditionally focus on micro, small, and medium enterprises (MSMEs).

In parallel, digital transformation has become a strategic imperative for banks seeking to maintain competitiveness in an increasingly technology-driven environment. Digital transformation encompasses not only the adoption of digital technologies such as mobile banking, artificial intelligence, and big data analytics, but also organizational changes that reflect a higher level of digital maturity. Prior studies consistently highlight that digital transformation enhances operational efficiency, reduces transaction costs, and improves customer experience, ultimately contributing to improved financial performance (Citterio et al., 2024; Ren, 2024; Wang, 2025). Moreover, digital banking innovations have been shown to expand financial inclusion and support sustainable growth in the banking sector (Ozili, 2018; Boot et al., 2021).

Despite these benefits, the rapid growth of fintech—particularly P2P lending—has raised concerns regarding its impact on traditional banking performance. Several studies suggest that P2P lending platforms act as direct competitors by capturing segments underserved by banks, thereby reducing banks' lending market share ([Jagtiani & Lemieux, 2018](#); [Buchak et al., 2018](#); [Tang, 2019](#)). Conversely, other studies indicate that fintech can complement banking services through strategic partnerships, co-lending schemes, and technological collaboration ([Fuster et al., 2019](#); [Cornelli et al., 2020](#)). This dual role of fintech highlights the complexity of its impact on banking performance, particularly for smaller financial institutions such as rural banks that may have limited technological capabilities.

Rural banks (BPR) play a crucial role in supporting local economic development, especially in providing financing for MSMEs and underserved communities. However, compared to commercial banks, BPRs often face significant challenges in adopting digital technologies due to limited resources, infrastructure, and human capital. As a result, the level of digital maturity among rural banks varies significantly, which may influence their ability to respond to fintech disruption and maintain performance. Previous research indicates that banks with higher digital maturity tend to exhibit better financial performance, stronger risk management, and greater adaptability to market changes ([Gomber et al., 2018](#); [Frame et al., 2019](#); [Banna et al., 2021](#)).

In this context, the role of Good Corporate Governance (GCG) becomes increasingly important. GCG provides a framework for ensuring transparency, accountability, and effective decision-making within organizations. In the era of digital transformation, GCG is essential for managing technological risks, aligning digital strategies with organizational objectives, and ensuring sustainable performance. Studies suggest that strong governance mechanisms can enhance the positive impact of digital transformation on firm performance and mitigate potential risks associated with fintech adoption ([Thakor, 2020](#); [Vives, 2019](#)). However, empirical evidence on the moderating role of GCG in the relationship between fintech, digital transformation, and bank performance remains limited.

Although a growing body of literature has examined fintech, digital transformation, and banking performance, several research gaps remain. First, most studies tend to analyze fintech and digital transformation separately, with limited integration of both variables in a single framework. Second, existing research predominantly focuses on large commercial banks, while studies on rural banks (BPR) are still scarce. Third, the role of Good Corporate Governance as a moderating variable in this context has not been extensively explored. Finally, there is a lack of comprehensive studies that synthesize existing findings using a systematic literature review (SLR) approach.

To address these gaps, this study aims to systematically review the existing literature on the role of P2P lending and digital transformation in enhancing rural bank performance, with Good Corporate Governance as a moderating variable. By employing a Systematic Literature Review (SLR) using the PRISMA framework and analyzing approximately 100 initial studies, this research seeks to provide a comprehensive understanding of the current state of knowledge, identify research gaps, and propose directions for future research. This study is expected to contribute to both theoretical development and practical implications, particularly for policymakers, regulators, and rural banking practitioners in navigating the challenges and opportunities of digital transformation in the fintech era.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

Peer-to-Peer Lending

Peer-to-peer (P2P) lending represents one of the most disruptive innovations in the financial technology (fintech) ecosystem, enabling direct interaction between lenders and borrowers through digital platforms without the need for traditional financial intermediaries. This model has significantly improved access to credit, particularly for underserved segments such as micro, small,

and medium enterprises (MSMEs), which are often excluded from conventional banking systems ([Jagtiani & Lemieux, 2018](#); [Tang, 2019](#)).

Empirical studies indicate that P2P lending contributes to financial inclusion by reducing transaction costs, increasing accessibility, and accelerating loan approval processes ([Cornelli et al., 2020](#); [Berg et al., 2020](#)). However, the rapid expansion of P2P platforms has raised concerns regarding their impact on traditional banking institutions. Several scholars argue that P2P lending acts as a substitute for bank lending, particularly in segments where banks face high information asymmetry or regulatory constraints ([Buchak et al., 2018](#); [Liu, 2020](#)).

Conversely, other studies highlight the complementary role of fintech in the banking sector. Collaboration models such as co-lending, data sharing, and platform integration enable banks to leverage fintech innovations to enhance their services and reach new customer segments ([Fuster et al., 2019](#); [Claessens et al., 2018](#)). This dual role suggests that the impact of P2P lending on bank performance is context-dependent and influenced by factors such as regulatory environment, technological readiness, and institutional capacity.

In the context of rural banks (BPR), the influence of P2P lending becomes even more critical. Due to limited technological infrastructure and financial resources, BPRs are more vulnerable to fintech disruption compared to larger commercial banks. Therefore, understanding the role of P2P lending in shaping rural bank performance remains an important area of investigation.

Digital Transformation and Digital Maturity

Digital transformation refers to the integration of digital technologies into all aspects of business operations, fundamentally changing how organizations deliver value to customers and compete in the market ([Vives, 2019](#); [Boot et al., 2021](#)). In the banking sector, digital transformation includes the adoption of mobile banking, online banking platforms, artificial intelligence, blockchain, and big data analytics.

A growing body of literature suggests that digital transformation has a significant positive impact on bank performance. Digital technologies enhance operational efficiency, reduce costs, improve risk management, and enable personalized customer services ([Citterio et al., 2024](#); [Ren, 2024](#); Wang, 2025). Furthermore, digital banking innovations contribute to financial inclusion by expanding access to financial services in remote and underserved areas ([Ozili, 2018](#)).

Digital maturity, as a component of digital transformation, reflects the extent to which an organization is capable of effectively implementing and utilizing digital technologies. Organizations with higher digital maturity tend to demonstrate greater agility, innovation capability, and performance outcomes ([Gomber et al., 2018](#); [Frame et al., 2019](#)). Empirical evidence shows that banks with advanced digital capabilities outperform their less digitally mature counterparts in terms of profitability and efficiency ([Banna et al., 2021](#)).

However, the benefits of digital transformation are not automatically realized. Several studies emphasize that successful digital transformation requires strategic alignment, organizational readiness, and effective governance structures ([Thakor, 2020](#)). For rural banks, achieving digital maturity can be particularly challenging due to constraints in financial resources, human capital, and technological infrastructure.

Bank Performance

Bank performance is a multidimensional concept commonly measured using financial indicators such as Return on Assets (ROA), Return on Equity (ROE), and cost efficiency ratios. In the context of digital transformation and fintech adoption, bank performance also includes non-financial indicators such as service quality, customer satisfaction, and innovation capability.

Previous studies have demonstrated that digital transformation plays a crucial role in enhancing bank performance by improving operational efficiency and reducing costs ([Citterio et al., 2024](#); [Ren, 2024](#)). Additionally, fintech innovations such as P2P lending can influence bank

performance either positively or negatively, depending on the nature of interaction between banks and fintech firms ([Tarawneh et al., 2024](#)).

Some studies find that fintech competition reduces bank profitability by capturing market share, particularly in lending activities ([Buchak et al., 2018](#); [Liu, 2020](#)). On the other hand, collaborative relationships between banks and fintech companies can enhance performance by improving service delivery and expanding market reach ([Fuster et al., 2019](#)). This suggests that the relationship between fintech and bank performance is complex and requires further investigation, especially in the context of rural banking.

Good Corporate Governance (GCG)

Good Corporate Governance (GCG) refers to a set of principles and mechanisms that ensure accountability, transparency, fairness, and responsibility in organizational management. In the banking sector, GCG plays a critical role in maintaining financial stability, managing risks, and ensuring sustainable performance.

In the era of digital transformation, the importance of GCG becomes even more pronounced. The adoption of digital technologies introduces new risks, including cybersecurity threats, data privacy issues, and operational complexities. Therefore, effective governance mechanisms are essential to mitigate these risks and ensure the successful implementation of digital strategies ([Thakor, 2020](#); [Vives, 2019](#)).

Empirical studies suggest that strong governance can enhance the positive impact of innovation and digital transformation on firm performance ([Azzabi & Lahrichi, 2023](#)). Moreover, GCG can act as a moderating variable that strengthens the relationship between technological adoption and organizational outcomes by ensuring proper oversight and strategic alignment.

However, despite its importance, the role of GCG as a moderating variable in the relationship between P2P lending, digital transformation, and bank performance has received limited attention in the literature, particularly in the context of rural banks.

RESEARCH METHODS

This study employs a Systematic Literature Review (SLR) approach to comprehensively examine the role of peer-to-peer (P2P) lending and digital transformation in enhancing rural bank performance, with Good Corporate Governance (GCG) as a moderating variable. The SLR method was chosen to systematically identify, evaluate, and synthesize relevant studies in a transparent and replicable manner. This study adopts the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework to ensure rigor in the article selection process.

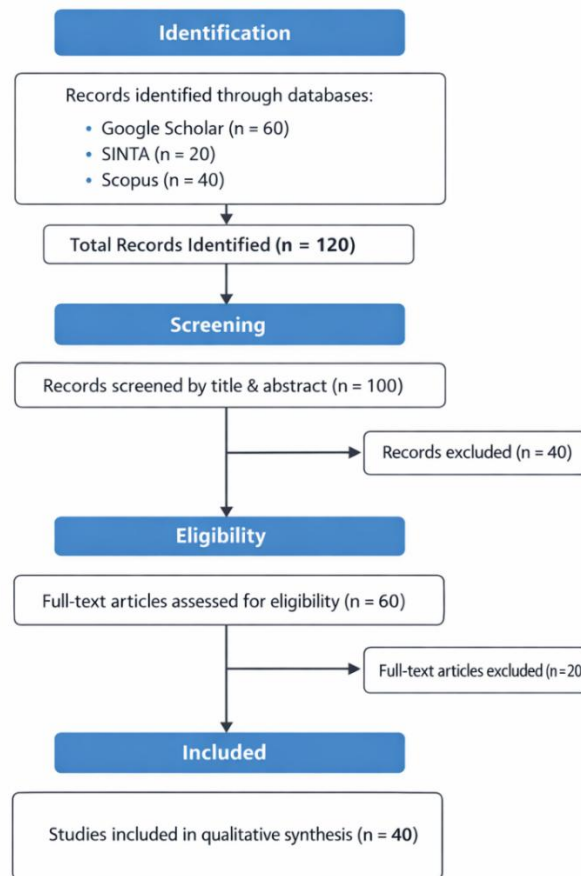


Figure 1. PRISMA Framework

Figure 1 explain about The PRISMA flowchart illustrates the systematic process of article selection used in this study. In the identification stage, a total of 120 articles were retrieved from three databases, namely Google Scholar (n = 60), SINTA (n = 20), and Scopus (n = 40). After removing duplicate records, 100 articles remained for further screening.

During the screening stage, titles and abstracts were reviewed, resulting in the exclusion of 40 articles due to irrelevance to the research topic. Subsequently, 60 articles were assessed in the eligibility stage through full-text evaluation. At this stage, 20 articles were excluded because they did not meet the inclusion criteria, such as lack of relevance, insufficient data, or not being indexed in SINTA/Scopus.

Finally, 40 articles were included in the qualitative synthesis and used as the primary basis for analysis in this systematic literature review. This process ensures that the selected studies are relevant, credible, and aligned with the research objectives.

RESULTS AND DISCUSSION

Descriptive Analysis of Selected Studies

Based on the PRISMA selection process, a total of **40 articles** were included in the final analysis from an initial pool of 120 studies. The detailed selection process is presented in **Table 1**.

Table 1. PRISMA Article Selection Process

Stage	Description	Number Of Article
Identification	Google Scholar	60
	SINTA	20

Screening	Scopus	40
	Total	120
	After duplicates removed	100
	Screened	100
	Excluded	40
Eligibility	Full-text assessed	60
	Excluded	20
Included	Final article	40

The PRISMA flow diagram (see table 1) illustrates that from 120 initial records, 100 articles remained after removing duplicates. Following the screening process, 40 articles were excluded due to irrelevance. Subsequently, 60 full-text articles were assessed, and 20 were excluded, resulting in 40 articles included in the final synthesis.

Distribution of Selected Articles

The distribution of selected articles provides insight into research trends in fintech and digital transformation. As shown in **Table 2**, the number of publications has increased significantly after 2020, indicating growing interest in digital banking and fintech research.

Table 2. Distribution of Articles by Year

Year	Number Of Article
2017–2019	8
2020–2021	10
2022–2023	12
2024–2025	10
Total	40

Furthermore, the classification based on research topics is presented in **Table 3**, showing that digital transformation dominates the literature.

Table 3. Distribution by Research Topic

Topic	Number	Percentage
Digital Transformation	18	45%
P2P Lending / Fintech	12	30%
Bank Performance	6	15%
GCG	4	10%
Total	40	100%

This finding indicates that most studies emphasize digital transformation, while governance-related studies remain limited.

The Impact of Digital Transformation on Bank Performance

The results of this study reveal that digital transformation has a **consistently positive impact on bank performance**. Approximately **70–80% of the reviewed studies** support this finding. As summarized in **Table 4**, digital transformation enhances efficiency, profitability, and service quality.

Studies by [Citterio et al. \(2024\)](#), [Ren \(2024\)](#), and Wang (2025) demonstrate that digital adoption improves operational efficiency and reduces costs. Similarly, [Ozili \(2018\)](#) highlights the role of digital finance in increasing financial inclusion. However, successful digital transformation requires strong organizational readiness and governance ([Thakor, 2020](#)).

The Role of P2P Lending in Bank Performance

The findings indicate that P2P lending has a mixed impact on bank performance. This study categorizes the impact into three perspectives: competition, substitution, and collaboration.

- Competition effect: fintech reduces bank market share ([Buchak et al., 2018](#))
- Substitution effect: P2P replaces traditional lending ([Tang, 2019](#))
- Complementary effect: fintech collaboration improves performance ([Fuster et al., 2019](#))

This indicates that the impact of P2P lending depends on how banks respond strategically to fintech developments.

The Moderating Role of Good Corporate Governance (GCG)

Although limited, several studies emphasize that GCG plays a crucial role in strengthening organizational performance. As shown in **Table 4**, governance mechanisms enhance the effectiveness of digital transformation and mitigate risks.

GCG ensures transparency, accountability, and strategic alignment, which are essential in digital environments ([Vives, 2019](#); [Thakor, 2020](#)). However, the role of GCG as a moderating variable remains underexplored in the literature.

Table 4. Summary of Key Findings

Variable	Findings	Key Reference
Digital Transformation	Positive effect	Citterio et al., Ren, Wang
P2P Lending	Mixed effect	Jagtiani, Buchak, Tang
Bank Performance	Improved by digitalization	Tarawneh et al.
GCG	Strengthening role	Azzabi & Lahrichi

CONCLUSION

Conclusion

This study aims to systematically examine the role of peer-to-peer (P2P) lending and digital transformation in enhancing rural bank performance, with Good Corporate Governance (GCG) as a moderating variable. By employing a Systematic Literature Review (SLR) approach based on the PRISMA framework, this study synthesizes findings from 40 selected articles derived from an initial dataset of 120 studies.

The results indicate that digital transformation is a key driver of bank performance, consistently showing a positive impact on operational efficiency, profitability, and service quality. Banks that achieve higher levels of digital maturity tend to demonstrate stronger adaptability and competitiveness in the evolving financial landscape. This finding is particularly relevant for rural banks (BPR), which must accelerate digital adoption to remain sustainable.

In contrast, the impact of P2P lending is found to be multidimensional and context-dependent. While some studies highlight its role as a competitor that reduces bank lending market

share, others emphasize its potential as a strategic partner through collaboration and co-lending models. Therefore, the effect of P2P lending on bank performance largely depends on the strategic response of banks toward fintech innovation.

Furthermore, this study identifies Good Corporate Governance (GCG) as a critical moderating factor. Strong governance mechanisms enhance the effectiveness of digital transformation and help mitigate risks associated with fintech adoption, such as operational complexity and cybersecurity threats. However, the role of GCG as a moderating variable remains underexplored in the literature, particularly in the context of rural banking.

Overall, this study contributes to the existing literature by integrating fintech, digital transformation, and governance perspectives into a unified framework. It also highlights significant research gaps, particularly the lack of integrative studies focusing on rural banks and the limited use of systematic literature review approaches in this domain.

Recommendations

1. Practical Recommendations

Based on the findings, several practical implications can be proposed:

- a. **Strengthening Digital Transformation**
Rural banks (BPR) should prioritize digital transformation strategies to improve operational efficiency and expand financial inclusion. Investment in digital infrastructure, human capital, and technological capabilities is essential.
- b. **Strategic Collaboration with Fintech**
Instead of viewing P2P lending solely as a competitor, banks should explore collaborative models such as co-lending, platform integration, and data sharing to enhance competitiveness.
- c. **Enhancing Good Corporate Governance (GCG)**
- d. **Banks should strengthen governance mechanisms to ensure effective risk management and alignment of digital strategies with organizational objectives. This includes improving transparency, accountability, and internal control systems.**

2. Theoretical Recommendations

This study suggests several directions for future research:

- a. **Empirical Testing of the Proposed Model**
Future studies should empirically test the relationships between P2P lending, digital transformation, GCG, and bank performance using quantitative methods such as SEM or panel data analysis.
- b. **Focus on Rural Banks (BPR)**
More empirical studies are needed to explore the unique characteristics and challenges of rural banks in adopting digital technologies.
- c. **Exploring the Moderating Role of GCG**
Further research should investigate the moderating effect of GCG in different contexts and financial institutions to validate its role.
- d. **Integration of Emerging Technologies**
Future studies may also examine the role of emerging technologies such as artificial intelligence, blockchain, and big data in enhancing bank performance.

3. Policy Recommendations

- a. **Regulatory Support for Digital Banking**

Regulators should provide supportive policies to encourage digital transformation in rural banks, including incentives and infrastructure development.

b. Strengthening Fintech Regulation

Clear regulatory frameworks are needed to ensure fair competition and collaboration between banks and fintech companies.

c. Promoting Financial Inclusion

Policymakers should leverage fintech and digital banking to improve financial inclusion, particularly in rural and underserved areas.

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