

Digitalisation and Relationship Banking in Managing Non-Performing Loans: A Case Study of BPR Karyajatnika Sadaya

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ABSTRACT

This study examines how a hybrid strategy combining digital credit classification and relationship banking influences the management of non-performing loans (NPL) at BPR Karyajatnika Sadaya, Setiabudi branch. Using a qualitative case-study approach, data were collected through semi-structured interviews with four stakeholders (a frontline officer, a credit analyst, a branch manager, and a defaulting borrower) and analysis of internal credit records and PSAK 71-based reports covering 2019–2024. Data were analysed using Miles & Huberman's framework (data reduction, display, conclusion drawing) and thematic coding. Results indicate that (1) digital collectability classification improved early detection of risky accounts, (2) multi-layer verification reduced approval errors and contributed to a decrease in new NPL cases in 2023, and (3) relationship banking remains essential to restructure loans for MSMEs. The study contributes empirically by demonstrating that a staged digitalisation programme, complemented by strengthened human capacity, can reduce NPL while maintaining LDR stability. Implications for BPRs and regulators are discussed.

Keywords: Non-Performing Loans; Loan Settlement; Rural Credit Banks; Loan Restructuring; Risk Management

INTRODUCTION

Non-Performing Loans (NPLs) remain one of the most persistent challenges for maintaining the stability and profitability of financial institutions, particularly in microfinance institutions such as Bank Perkreditan Rakyat (BPR) in Indonesia. High NPL ratios not only threaten institutional liquidity and sustainability but also constrain local banks' ability to extend credit to micro, small, and medium enterprises (MSMEs)—a sector that serves as the backbone of Indonesia's regional economies. According to the Financial Services Authority (Otoritas Jasa Keuangan, 2023), the average NPL ratio of BPRs in Indonesia exceeded the prudential benchmark of 5%, signalling the urgent need for improved credit risk management and recovery mechanisms.

The increasing complexity of loan portfolios and the dynamic nature of MSME financing have prompted rural banks to adopt hybrid strategies that combine relationship-based banking practices with digital innovation. Recent studies show that digital transformation significantly improves banks' operational efficiency and risk detection capabilities, enabling faster decision-making and better portfolio quality (Kang et al., 2023). However, despite these advances, relational and contextual understanding of borrowers—a hallmark of traditional banking—remains irreplaceable for effective loan monitoring and collection. This relational approach strengthens customer trust and facilitates better payment problem resolution through personal interaction and contextual knowledge (Lins et al., 2023). However, research exploring how small financial institutions in emerging economies integrate these two approaches is still limited.

BPR Karyajatnika Sadaya (BPR KS), one of the prominent local credit institutions in West Java, provides an intriguing case for such exploration. The Setiabudi Branch, which serves a diverse MSME clientele, has implemented a digital collectability classification system and a multi-layer verification mechanism to identify potential loan defaults early. Nonetheless, the branch continues to face challenges in sustaining low NPL ratios amidst fluctuating borrower income, limited financial literacy, and post-pandemic recovery pressures. Understanding the mechanisms through which BPR KS combines technological tools with interpersonal engagement could provide critical insights for similar financial institutions operating under resource constraints.

Prior literature predominantly focuses on NPL management in the commercial and conventional banking sectors (e.g., Chen & Ramasubramanian, 2022; Akbar et al., 2021), with minimal attention to the operational realities of microfinance institutions. Furthermore, existing studies on Indonesian BPRs have primarily focused on quantitative determinants of NPL (capital adequacy, interest rates, or macroeconomic variables) rather than exploring process-based strategies or organisational responses. This creates a clear empirical and conceptual gap in understanding how branch-level initiatives can reduce NPL through adaptive management and digital transformation (Mahmood & Rahman, 2023).

Therefore, this study aims to analyse the strategies implemented by BPR Karyajatnika Sadaya, Setiabudi Branch, in managing Non-Performing Loans, focusing on how digital credit classification, verification systems, and personalised borrower engagement contribute to credit risk mitigation. By adopting a qualitative case study approach, this paper seeks to provide a contextual understanding of NPL management from the perspectives of practitioners and internal stakeholders. The study contributes to the literature by offering empirical evidence from a micro-banking context in a developing economy and highlighting the integration of digitalisation and human-centred approaches in credit risk governance.

METHOD

This study employed a qualitative case study approach to obtain an in-depth understanding of how BPR Karyajatnika Sadaya (Setiabudi Branch) manages Non-Performing Loans (NPLs). The qualitative design was considered appropriate because the research aims to explore processes, strategies, and organisational practices rather than measure statistical relationships. The case study method enables a holistic investigation of managerial behaviour, decision-making patterns, and the contextual challenges associated with credit risk mitigation within a local microfinance institution. The research was conducted at BPR Karyajatnika Sadaya, Setiabudi Branch, located in Bandung, West Java, Indonesia. The branch was selected purposively for its diverse MSME loan portfolio and its recent implementation of a digital collectability classification system under PSAK 71. This branch also serves as a pilot unit for BPR KS in adopting integrated digital monitoring tools while maintaining traditional relationship-based banking services.

Data were collected from both primary and secondary sources. Primary data were obtained through semi-structured interviews with four key informants: the branch manager, a credit analyst, front-office staff, and one MSME borrower with experience of a restructured loan. These informants were selected using purposive sampling, ensuring their direct involvement in the loan management process. Secondary data consisted of internal credit reports, financial statements (2019–2024), OJK regulations, and company policy documents related to NPL control and digital implementation. Interviews were conducted face-to-face at the branch office between April and June 2024, each lasting approximately 45–60 minutes. All interviews were recorded with consent and transcribed verbatim for analysis. Document analysis complemented the interviews, validating and contextualising the information provided by respondents. Ethical considerations were ensured through confidentiality agreements and informed consent forms signed by participants.

Data analysis followed the Miles and Huberman (1994) interactive model, consisting of three stages: data reduction, data display, and conclusion drawing/verification. In the reduction phase, transcripts were coded inductively to identify recurring patterns related to NPL management strategies, digitalisation, and borrower engagement. Codes were grouped into broader categories, forming emerging themes. Thematic analysis was conducted manually to ensure familiarity with the data, supported by cross-validation among researchers to maintain analytical consistency. Triangulation between interview data and documentary sources strengthened the validity of findings. To ensure the trustworthiness of the qualitative findings, the study applied four validation criteria: credibility, transferability, dependability, and confirmability. Credibility was achieved through member checking, revisiting selected respondents to clarify the interpreted data. Transferability was addressed by providing a detailed description of the research context. Dependability was enhanced through an audit trail of coding decisions, while confirmability was supported by triangulating multiple data sources and researcher reflexivity. This study complied with ethical research standards set by the Universitas Pendidikan Indonesia Research Ethics Committee. Participants were informed about the purpose of the research, assured of anonymity, and given the right to withdraw at any stage. No sensitive financial or personal information was disclosed in the final report.

RESULTS AND DISCUSSION

Overview of Non-Performing Loans (NPL) Trends at BPR KS Setiabudi Branch

Over the period 2019–2024, BPR Karyajatnika Sadaya (Setiabudi Branch) experienced fluctuations in its Non-Performing Loan (NPL) ratio, primarily due to the economic slowdown following the COVID-19 pandemic. Based on internal credit reports, the branch recorded an NPL of 6.3% in 2020, which gradually declined to 4.7% in 2023 after implementing a digital collectability classification system. This improvement reflects the effectiveness of combining technology-based monitoring with human-driven borrower engagement. The branch's Loan to Deposit Ratio (LDR) remained stable at around 82–85%, indicating balanced liquidity management alongside credit risk control.

This result aligns with OJK's (2023) findings that smaller banks adopting digital early warning systems tend to demonstrate improved NPL recovery rates. It further confirms the argument of Rahman et al. (2023) that digitalisation enhances predictive capacity in credit operations, particularly when embedded within existing manual oversight systems.

Internal Factors Contributing to NPL Formation

Interviews revealed that internal management practices significantly influenced the formation of NPLs. Limited staff capacity in credit assessment, insufficient borrower monitoring, and inconsistent documentation were recurring issues before digitalisation. One credit officer explained:

“In the past, our analysis relied heavily on manual judgment, so sometimes borrower character and business feasibility were not assessed comprehensively.” — (Credit Analyst, Interview, 2024)

These findings align with Herijanto (2016), who highlighted that credit expertise, supervision, and monitoring processes affect NPL formation. Similarly, Raynaldi and Wahdiat (2025) found that borrower characteristics and analysts' internal capacity are key determinants of NPLs. The new multi-layer verification system has since reduced human error and bias in loan approvals, reinforcing these insights. Who emphasised that structured verification enhances credit discipline in micro-banking contexts.

In addition, digital documentation under PSAK 71 compliance allowed the branch to categorise loans more accurately into collectibility stages (Current, Special Mention, Substandard, Doubtful, and Loss), improving transparency and accountability. The enhanced system created a data-driven foundation for managerial decision-making.

External Factors Affecting Borrower Performance

Beyond internal processes, external economic pressures remain a dominant cause of loan delinquency. Informants cited fluctuating business income, market uncertainty, and limited borrower financial literacy as key drivers of default, especially among micro-entrepreneurs. As the branch manager noted:

“Most of our clients are small traders and service providers. Their cash flow is highly seasonal, and financial literacy is still low, so payment discipline becomes a challenge.” — (Branch Manager, Interview, 2024)

This finding resonates with prior studies (Chen & Zhao, 2022) that identified income instability and low financial awareness as structural causes of NPLs in developing countries. However, at the Setiabudi Branch, these challenges were addressed through a personalised borrower engagement approach that combined digital monitoring with periodic in-person visits and counselling.

Such hybrid practices highlight the importance of relationship banking even within an increasingly digitalised financial environment. Relationship-based trust remains essential in maintaining repayment commitment among MSME borrowers, especially in informal sectors where emotional and social capital often substitute for collateral.

The Role of Digitalisation in NPL Management

The implementation of a digital collection eligibility classification system in 2022 marked a turning point in branch operational performance. This system automatically classifies loan risk levels based on payment history and transaction data, and generates real-time alerts for accounts at risk of default. According to internal staff, this mechanism enables early detection of high-risk borrowers, allowing for preventive measures such as restructuring, rescheduling loans, or targeted communication. These findings align with Cao et al. (2022), who state that digital transformation improves banks' ability to differentiate and manage credit risk, thereby reducing non-performing loan (NPL) rates through improved data accuracy and predictive analytics. Similarly, McKinsey (2021) emphasises that digital-based collection strategies—which integrate analytics and digital engagement—can significantly reduce NPL ratios and accelerate payment processing. However, technology alone is not enough; it is most effective when combined with trained human judgment. The integration of digital tools and relational monitoring demonstrates complementarity rather than substitution between technological and human factors in credit governance.

Managerial Strategies for NPL Recovery

The branch employed three main strategies for NPL recovery:

1. Preventive Verification, through multi-layer credit assessment before disbursement.
2. Corrective Monitoring, involving digital alerts combined with on-site visits.
3. Remedial Action, including restructuring, collection by third parties, and collateral execution for persistent defaults.

Field evidence indicates that these actions, taken together, reduced overdue accounts and improved portfolio quality. Recovery success was attributed not only to system improvements but also to staff capacity development, which included training in digital literacy and communication techniques for handling distressed borrowers.

This dual-capability approach corresponds with the dynamic capability theory (Teece, 2018), which posits that organisational performance in turbulent environments depends on the ability to integrate, build, and

reconfigure internal and external competencies. Hence, BPR KS's adaptation reflects a micro-level manifestation of this theoretical framework in a developing-economy setting.

Discussion and Theoretical Implications

These findings highlight the synergistic interaction between digitalisation and relationship-based banking as determinants of successful NPL management in microfinance institutions. Although digital systems enhance data accuracy and predictive control, human interaction maintains borrower trust and motivation to repay loans. This aligns with the findings of Di Silva et al. (2023), which show that human interaction continues to play a crucial role in obtaining qualitative 'soft information' that supports sound lending decisions, even in an era of increasing digitalisation. Similarly, Alkahfi et al. (2024) show that digital banking transactions and technological innovations significantly reduce problem loans, reinforcing the value of digital tools in improving credit quality.

This complementarity challenges the common assumption that digital transformation alone guarantees risk reduction. Instead, it supports the socio-technical perspective, where organisational success arises from the alignment of technological innovation and human capability development. From a theoretical perspective, this study expands the discussion on credit risk management in emerging markets by showing how small-scale banks implement regulatory frameworks (PSAK 71) through context-appropriate digital innovation. Practically, this study offers a model for other rural banks to emulate — a balanced integration of automation and engagement.

CONCLUSION

This study examined the strategies adopted by BPR Karyajatnika Sadaya, Setiabudi Branch, in managing Non-Performing Loans (NPLs) through the integration of digital innovation and human-centred approaches. The findings indicate that the decline of NPLs—from 6.3% in 2020 to 4.7% in 2023—was achieved through the implementation of a digital collectability classification system, a multi-layer verification process, and personalised borrower engagement. These strategies collectively enhanced early risk detection, improved regulatory compliance with PSAK 71, and strengthened trust between the bank and its MSME clients.

The study concludes that digital transformation alone is insufficient to improve credit quality. Its effectiveness relies on the institution's ability to combine technological precision with relational intelligence. The digital system enabled real-time monitoring and data-driven decision-making, while relationship banking sustained borrower discipline and recovery efforts. This techno-relational synergy demonstrates that digitalisation and interpersonal trust function not as substitutes but as complementary mechanisms in mitigating credit risk within microfinance institutions.

From an academic standpoint, the study contributes to the broader discourse on credit risk management in emerging economies by offering empirical evidence of how small-scale financial institutions adapt to regulatory and technological demands while preserving their social capital. The case of BPR KS exemplifies how contextualised digital adoption—supported by competent human resources—can transform traditional micro-banking operations into more resilient, transparent, and inclusive financial systems. Ultimately, the success of NPL management in BPR KS underscores the importance of adaptive capability: the organisational capacity to reconfigure digital tools, human expertise, and customer relationships in response to evolving financial challenges.

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