



Digital Innovation in the Transformation of BPR: Building a Sustainable Financial Ecosystem in the Era of Disruption

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Abstract

In the continuously evolving digital era, the financial sector, particularly Rural Credit Banks (BPR), faces significant new challenges and opportunities. Digital transformation is not merely a trend but an urgent necessity to ensure the sustainability and competitiveness of financial institutions amid technological disruptions. The research method used is a qualitative approach with literature study techniques, involving data analysis from various sources, including official documents, scientific articles, and observations of BPR practices in the field. The results indicate that digitalization can significantly improve the operational efficiency of BPR, expand access to financial services for the community, and build an inclusive and sustainable financial ecosystem. Digital innovations, such as the development of mobile banking applications and the use of analytical technology, enable BPR to reach segments of society that were previously underserved by formal financial institutions. However, despite the great potential offered by digital innovations, many BPR still face various challenges in their implementation. This research identifies several key barriers, including a lack of understanding of technology among management and staff, inadequate information technology infrastructure, and regulatory challenges that hinder the adoption of new technologies. Additionally, findings highlight the importance of training and skill development for BPR employees to adapt to rapid digital changes. This research also emphasizes the need for collaboration between BPR and financial technology (fintech) companies and other institutions to create a mutually supportive ecosystem. Through this cooperation, BPR can leverage existing innovations to enhance service quality and expand market reach. The results of this study are expected to contribute significantly to the understanding and practice of digital innovation in the financial sector, as well as serve as a reference for stakeholders, including regulators, academics, and practitioners in the financial field, in formulating policies and strategies that support the development of BPR in Indonesia.

Keywords: *Digital Innovation, Rural Credit Banks, Digital Transformation, Sustainability, Financial Ecosystem.*

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1. Introduction

In the increasingly evolving digital era, the financial sector, including Rural Credit Banks (BPR), faces significant new challenges and opportunities. Digital transformation is not merely a trend but an urgent necessity to ensure the sustainability and competitiveness of financial institutions amid technological disruptions. According to research by Buhel & Ocheretko (2024), digitalization in the financial sector can enhance operational efficiency and expand access to financial services for the community. This is particularly important for BPR, which plays a strategic role in accessing and providing financial services to underserved segments of society.

Based on the Roadmap for the Development and Strengthening of the BPR and BPRS Industry 2024-2027¹, there is a strong emphasis on the acceleration of digitalization as one of the main enablers in strengthening the structure and competitiveness of BPR. This roadmap outlines the strategic steps that need to be taken to digitalize services, improve accessibility, and strengthen the role of BPR in providing financial services to the community, especially in remote areas. One important point in the roadmap is the strengthening of information technology infrastructure, which enables BPR to offer more innovative and responsive products and services to meet customer needs.

Digital innovation is not limited to the development of mobile or internet banking applications but also includes the use of technologies such as big data, data analytics, and artificial intelligence (AI) to understand customer behavior and tailor the products and services offered. According to a study by Serang (2024), digitalization can be key to building an inclusive and sustainable financial ecosystem, which can enhance community participation

in the formal financial system. By leveraging technology, BPR can reach more customers, including segments that were previously underserved by formal financial institutions.

However, despite the many potentials offered by digital innovation, many BPR still face obstacles in technology implementation. Research by Safitri et al. (2024) indicates that a lack of understanding of technology and inadequate infrastructure are the main barriers to the digital transformation of BPR. Many BPR are trapped in traditional practices and find it difficult to adapt to rapid changes in the financial industry. Additionally, challenges in regulation and supervision also affect BPR's ability to quickly adapt to market changes. Rigid regulations can hinder innovation and slow down the adoption of new technologies.

Furthermore, challenges related to human resources also need to be addressed. Many BPR employees do not have the necessary skills to face digital changes, which can lead to an inability to optimally utilize technology. Therefore, it is important for BPR to provide training and skill development for their employees so they can adapt to new technologies and maximize the potential offered by digital innovations.

Although there has been research discussing digitalization in the financial sector, there is still a lack of studies specifically examining how BPR can build a sustainable financial ecosystem through digital innovation, especially in the context of Indonesia. Existing research tends to focus on large banks or international financial institutions, while BPR, as local institutions with a strategic role in the regional economy, are often overlooked. Therefore, this study aims to fill that gap by exploring strategies and best practices in digital innovation applied by BPR to create a sustainable financial ecosystem in the era of disruption.

By understanding the challenges and opportunities faced by BPR in the digital transformation process, as well as exploring how BPR can leverage innovation to enhance competitiveness and sustainability, this research is expected to make a significant contribution to the understanding and practice of digital innovation in the transformation of BPR. Additionally, the results of this study are expected to serve as a reference for stakeholders, including regulators, academics, and practitioners in the financial field, in formulating policies and strategies that support the development of BPR in Indonesia.

2. Research Methods

The writing method used in this research employs a qualitative approach with literature study techniques. Qualitative research is a research approach that focuses on understanding social phenomena through the collection and analysis of non-numeric data. This writing procedure adapts a development model in data collection; the author gathers data using observation methods and literature studies. The data obtained through literature studies includes the study objects of OJK documents, scientific articles, and journals relevant to the issues discussed above. Additionally, data sources are also obtained directly through observations in electronic media.

The data analysis techniques used include :

1. Data Collection: This process involves searching for data from various sources.
2. Data Reduction: Selecting information that has been obtained. If the data collected is not relevant, it can be discarded. This way, only truly accurate information is gathered.
3. Conclusion Drawing: This final stage addresses the issues that arise.

Data is presented in the form of concepts and theories, along with various examples that support the concepts and theories outlined. The described data is then analyzed by comparing information related to past issues and relating it to previous concepts and theories, which will produce a coherent thread regarding the issues discussed in this research. Subsequently, all data obtained from both documentation sources and observations will be correlated to generate new ideas. The new ideas produced will be presented clearly and described in detail according to the needs and issues outlined in the previous problem formulation. The new ideas discussed can serve as a reference for practical applications for all readers.

3. Results and Discussion

3.1. The Existence and Condition of Rural Credit Banks and Islamic Rural Credit Banks in Indonesia

The role and contribution of the BPR and BPRS industry to the regional economy are supported by their distribution, particularly BPR, which covers almost all provinces in Indonesia. Data as of December 2023 shows that 70.1% of BPR are located in Java and Bali, with the highest numbers in East Java, Central Java, and followed by West Java. In line with BPR, 59.5% of BPRS are also distributed in Java and Bali, with the highest numbers in Central Java, West Java, and followed by East Java².



Figure 1. Distribution of BPR based on quantity and province
Source : Data processed by OJK



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In its development, the number of BPR has shown a declining trend throughout the period from 2016 to December 2023 (www.ojk.go.id). Initially, there were 1,633 BPR, which decreased by 231 to a total of 1,402 BPR. This decrease in the number of BPR is largely due to the consolidation of the BPR industry, both through mergers and dissolutions. However, the decline in the number of BPR was accompanied by a trend of increasing the number of BPR office networks, with the number of branch offices increasing by 333 to a total of 1,938 branch offices. Meanwhile, for BPRS, during the same period, there was an increase in the number of BPRS to 174.

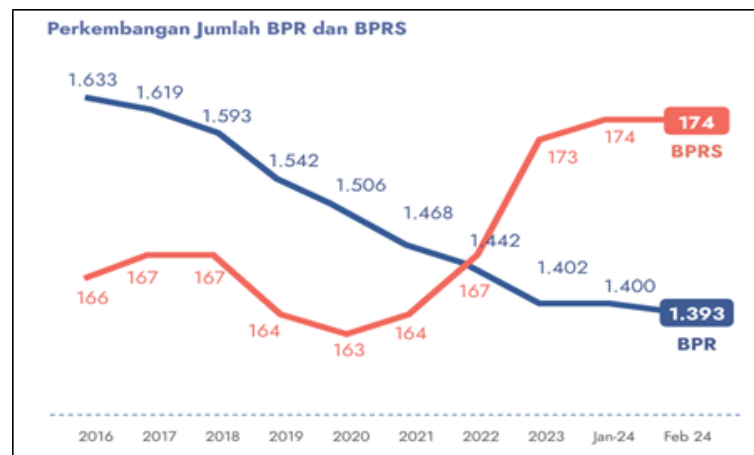


Figure 3. Development of the number of BPR and BPRS (2016-2023)
Source : Data processed by OJK

3.2. Digital Service Innovations of BPR and BPRS in Indonesia

Many BPR and BPRS have begun to adopt digital technology to enhance their services. The following are implementations of digital service innovations in several BPR/BPRS, including :

Table 1. BPR/BPRS that have Mobile Banking Application Services

Source: Obtained from the BPR and BPRS websites

No	BPR/BPRS	Mobile Banking Application
1	BPR Lestari Bali	LestariMobile
2	BPR Intidana Sukses Makmur	M-Banking Intidana
3	Perumda BPR Bank Magelang	E-Bama (E-money Bank Magelang)
4	BPR Universal	Universal Mobile
5	BPR Hasamitra	Hasamitra Mobile
6	BPR Indra Candra	Indra Mobile
7	BPR Arto Moro	Arto Moro Mobile
8	BPR Mandiri Artha Abadi	Aplikasi Mobile BPR MAA
9	BPR Dana Nusantara	Danus Mobile
10	BPR BKK Jateng	BKK Mobile
11	BPRS Dinar Ashri	Dinar Mobile
12	BPRS Fajar Sejahtera Bali	Fajar Mobile
13	BPRS HIK Parahyangan	Muvid Ib
14	BPRS Cilegon Mandiri	CIMA Mobile

The utilization of IT is an unavoidable aspect in the current digital era. This utilization can be implemented on both the operational side and business activities, and it needs to be supported by the quality of human resources as well as the availability of IT infrastructure itself. In the BPR and BPRS industry, the utilization of IT has been implemented to support the operational activities of BPR and BPRS as regulated in POJK Number 75/POJK.03/2016 concerning Information Technology Standards for BPR and BPRS (POJK SPTI).

According to Management of Digital Innovation (2022), digital innovation can encompass various aspects, from the development of new products and services to enhancing customer experience and operational efficiency. In the context of the financial sector, digital innovation plays a crucial role in transforming how financial institutions operate, enabling them to respond to customer needs more quickly and effectively. Digital innovation is not limited to the development of new technologies but also includes changes in organizational culture, business strategies, and operational models. This aligns with the views expressed by Marcos-Rodriguez et al. (2024), which emphasize that digital transformation requires commitment from all layers of the organization to adopt new technologies and optimally utilize data. In this regard, digital innovation becomes a key driver for financial institutions to remain relevant and competitive in an increasingly dynamic market.

Digital innovation has a significant impact on BPR, including :

1. Increased Operational Efficiency : By adopting technology, BPR can reduce time and costs in service processes, thereby increasing productivity.
2. Customer Satisfaction : Enhancing customer experience through faster and more responsive services, as well as ease of access.
3. Accessibility : Expanding the reach of BPR services to remote areas and communities that were previously underserved.

3.3. Building a Sustainable Financial Ecosystem

Digital transformation in the financial sector has become a global phenomenon that changes how financial institutions operate and interact with customers. According to Gil & Wieland (2024), this transformation involves not only the adoption of new technologies but also changes in organizational culture and business models. Financial institutions that successfully undergo digital transformation can enhance their competitiveness and provide better services to customers. In the context of BPR, digital transformation is crucial for reaching a broader segment of society and improving financial inclusion. By leveraging digital technology, BPR can offer more innovative products and services, such as online loans, mobile banking applications, and chatbot-based

customer service. This aligns with research by Darma Serang (2024), which shows that digitization can improve operational efficiency and expand access to financial services for previously underserved communities.

BPR can collaborate with fintech and other institutions to create a mutually supportive ecosystem with PJTI, fintech, IKD, and other entities. Through cooperation with PJTI, the BPR and BPRS industries can utilize CBS, the placement and management of electronic systems at DC and DRC, development of LOS, mobile apps, electronic bill payments, and other features. In collaboration with IKD, BPR and BPRS can partner with IKD entities involved in aggregation, innovative credit scoring, funding agents, E-KYC, and so on to support the optimization of business processes and the development of BPR and BPRS products.

There is also potential for cooperation between BPR and BPRS with e-commerce, which has become a trend in shopping and transactions. Post-COVID-19 pandemic, more merchants are joining e-commerce platforms, offering sales potential with broader reach and more efficient operational costs. This opportunity can be utilized by BPR and BPRS for the development of credit distribution products and services through a referral scheme, where BPR and BPRS act as lenders and e-commerce serves as a referral provider for potential partners to be offered loans by BPR and BPRS.

Through collaboration with various institutions, BPR and BPRS can reduce manual processes, making services more effective and efficient, provide transactional products and services, facilitate customer access to electronic transactions as part of service enhancement, and add new revenue potential from fee-based income on electronic service transactions. Furthermore, this can enhance the competitiveness and brand image of BPR and BPRS in the digital era, as well as potentially increase third-party funds in BPR and BPRS.

3.4. Challenges in Implementing Digital Innovation

Although digital innovation offers many opportunities, BPR also faces various challenges in its implementation. According to Froehlich (2023), some of the main challenges include a lack of understanding of technology, inadequate infrastructure, and rigid regulations. Many BPRs are stuck in traditional practices and find it difficult to adapt to the rapid changes in the financial industry.

However, with the right strategies, BPR can leverage digital innovation to enhance efficiency, expand service reach, and build better relationships with customers. Research by Khunaini et al. (2023) highlights the importance of training and skill development for BPR employees to adapt to new technologies and maximize the potential offered by digital innovation. Additionally, collaboration with financial technology (fintech) companies can also be a solution to address the challenges faced by BPR in the digital transformation process.

Amid the massive trend of technology adoption in the financial sector, BPR and BPRS still struggle to provide adequate IT infrastructure. A survey by OJK in 2022 showed that most BPRs have limited IT infrastructure, particularly regarding core banking systems, data centers, and disaster recovery centers.

Based on the survey, only 57.3% of respondent BPRs have an integrated and real-time core banking system. Furthermore, the use of data centers is also relatively inadequate, with BPRs operating in-house data centers lacking sufficient supporting equipment, such as air conditioning, Uninterruptible Power Supply (UPS), and so on. Some BPRs have not yet utilized data centers. In line with the limited basic IT infrastructure, the development of electronic banking services in BPR is also very limited, both in terms of the number of BPRs offering services, features, and system security. The survey results indicate that only 10.3% of respondent BPRs have electronic banking services such as ATMs, SMS Banking, Internet Banking, and/or Mobile Banking.

The development of IT systems has not fully become a priority for BPR and BPRS. This is evident from the fact that some respondent BPRs do not have plans for future system development, both for core banking systems and other services. This aligns with the finding that more than 25% of respondent BPRs do not have a medium-term IT development strategy, and over 30% of respondent BPRs do not allocate specific funds for IT development. In terms of incident management, most BPRs still cannot resolve incidents independently and rely on the IT service providers they use. Additionally, there are still BPRs that do not have a disaster recovery plan as a guideline for actions to be taken in the event of a disaster.

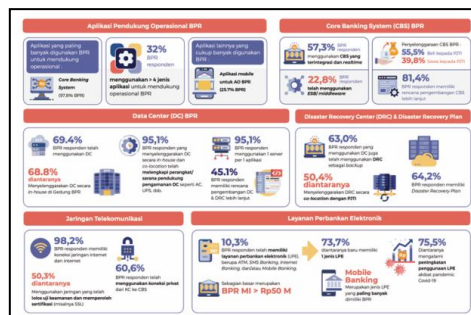


Figure 4. Overview of BPR IT Infrastructure
Source : BPR IT survey (DPNP, 2022)

The condition of the IT infrastructure in BPR is also inadequate from the people aspect in the management of IT. According to the OJK survey results, there are still BPRs that do not have sufficient people aspects, including the availability of a dedicated unit/function handling IT, career paths for employees managing IT, the roles performed within the IT unit, and relatively low remuneration for IT human resources, especially in small-scale BPRs. Limitations in remuneration and career advancement can be a major consideration for IT human resources when deciding to work in BPR.

4. Conclusion

Digital innovation is key for BPR to transform and face challenges in the era of disruption. By implementing technology, BPR can enhance efficiency, expand access to services, and build a sustainable financial ecosystem. This transformation will not only improve the competitiveness of BPR but also contribute to local economic growth and financial inclusion. Although digital innovation offers many benefits, there are several challenges that BPR and BPRS need to address, such as :

1. Resource Limitations: Many BPRs have constraints in terms of budget and human resources to develop technology.
2. Resistance to Change: Some employees and management may be reluctant to adapt to new technologies.
3. Data Security: The implementation of digital technology also brings data security risks that need to be effectively managed.

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