

THE ROLE OF DIGITAL HR COMPETENCE IN ACCELERATING BPR DIGITAL TRANSFORMATION: A SYSTEMATIC REVIEW

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ABSTRACT:

This research analyzes the role of human resource (HR) digital competencies in accelerating digital transformation at Rural Banks (BPR) toward a sustainable financial ecosystem. Thru a systematic review using the PRISMA method, it was found that enhancing digital competencies, such as technological literacy, data analysis, and sustainable innovation, is crucial for facilitating the digital transformation of microbanks. Other supporting factors include technological collaboration, a culture of innovation, and continuous competency development. The research results indicate that strengthening human resource digital competencies not only supports the success of digital transformation but also contributes to the sustainability of an inclusive social and economic financial ecosystem.

.Keywords: Human resource; digital competencies; digital transformation; Rural Banks

A. INTRODUCTION

New business models based on products and services related to new information technology, such as big data, blockchain, cloud computing, artificial intelligence, and smart investment consultants, have emerged as a result of changes in banking productivity. In addition to promoting new forms of money (digital currencies) and making the trading of digital banking products commonplace, smart contracts and other technologies are drastically changing the banking payment and clearing systems (Zuo et al., 2021). Digital technologies usually change products and services to fit the changing needs of customers. They also change how these products and services are advertised and given, depending on fresh ways to talk to customers directly (Diener & Spacek, 2021; Filotto et al., 2020; Léahteenmèaki et al., 2022).

The rapid development of information technology has brought the lives of people around the world into a new era often called the Industrial Revolution 4.0 era. This era is marked by the development of various technological innovations such as the Internet of Things (IoT), Cloud Computing, Artificial Intelligence (AI), and Machine Learning. The use of various technologies in the financial services sector has brought significant changes to the banking industry. These changes can be seen from 4 (four) aspects which then drive changes in the future banking landscape (Johannes, 2022).

First, changing consumer needs for banking goods and services. Generally speaking, as information technology has developed, customer demands have prompted the development of goods and services that are user-friendly, secure, customized, and unaffected by fashion. The quality of various goods and services can also be readily compared by customers.

The utilization of data to enhance the quality of goods and services is the second (Data Enhanced Product and Services) approach. Big data, or the utilization of vast amounts of data,

can yield information that banks can use to generate new business categories and numerous opportunities.

Third, new alliances with large corporations and startups are emerging. A new digital ecosystem has emerged as a result of technological advancements, and the Bank is now one of its participants. The Bank's collaborations with fintech and bigtech companies can open doors for the Bank to expand its customer base, leverage partner innovations, and obtain data for product and service development.

Fourth, switching to a digital business model from the operational model. The Bank must immediately implement a digital transformation due to the advancement of information technology and shifts in consumer behavior. The Bank's transition to a fully digital bank offers an efficient and successful business model that should expand the Bank's reach and penetration into all societal levels, ultimately promoting greater profitability and inclusivity while preserving its operations in the face of fiercer competition in the financial services industry.

The following is a description of the impact of the Industrial Revolution on Banking.

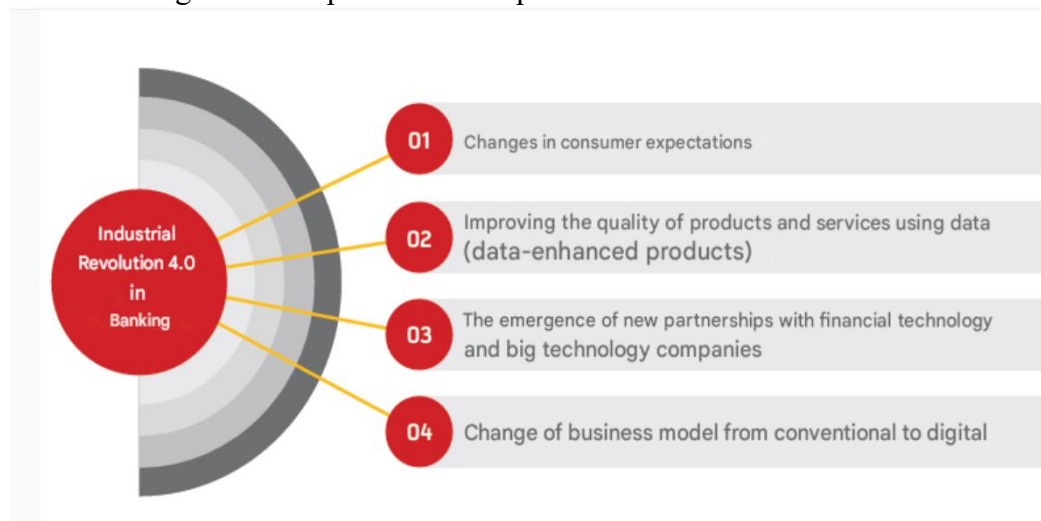


Figure 1. Impact of the Industrial Revolution on Banking

Based on these conditions, there are several things that are important points of change. This is known as the digital banking transformation blueprint. As in the following picture.

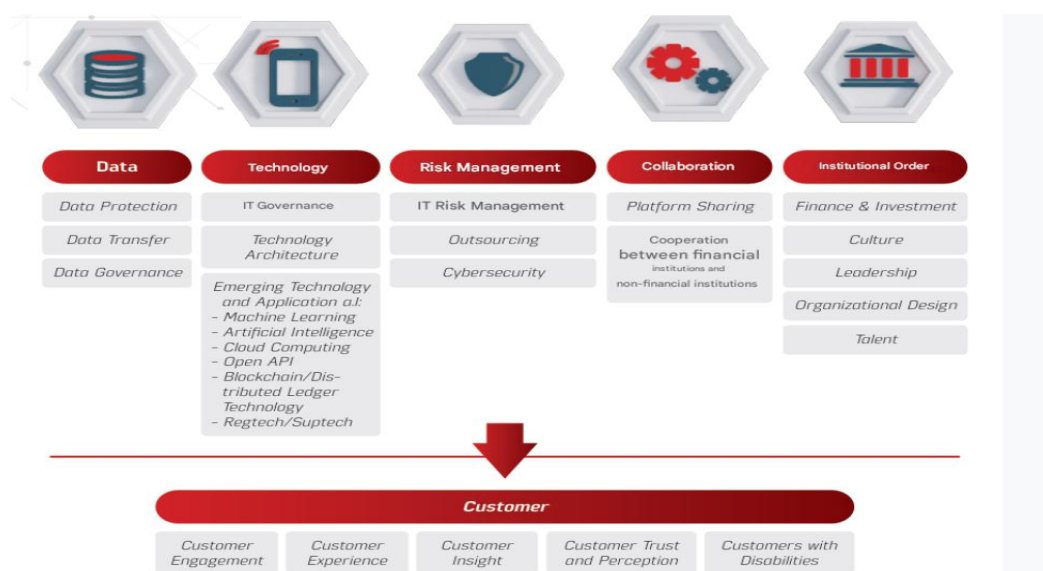


Figure 2. Digital Transformation Blueprint for Banking

Banks as the main pillar of financial institutions play a role in the formation of a new economic ecosystem created by digital transformation. In order to be in line with the principles of the new economic ecosystem, banks must carry out their basic mission as a catalyst for economic movement that creates a transformation of society to be more prosperous. Therefore, digital transformation efforts carried out by banks in the form of improving customer experience (Customer Experience), implementing the best processes (Operational Excellence), and creating new business models (New Business Models), can make banks grow exponentially, especially in developing countries such as Indonesia (Hie, 2021).

People's Economic Bank or abbreviated as BPR as one of the banks in Indonesia plays an important role in supporting local economic growth through the development of micro, small and medium enterprises (MSMEs) through products that are relevant to local needs. The role of BPR towards MSMEs is none other than as a partner that strengthens institutions and financial capacity in the region. However, there are still challenges faced by BPR, one of which is competition with other financial institutions that demand increased operational efficiency and accelerated technological adaptation. The results of previous studies stated that (Khan & Mujitaba, 2023; Mergel et al., 2019; Nadkarni & Prügl, 2021; Chen et al., 2022; Ogunrinde, 2022; Troilo, 2023). the main challenges that will be faced are related to the Information Technology (IT) infrastructure system, services, products, business models, procedures and work systems, or organizational structures. In order to achieve satisfying outcomes from digital technology, highly qualified personnel and executives must contribute to its utilization. (Nadkarni & Prügl, 2021), which leads to the development of products and services (Mergel et al., 2019).

Collaboration in the Information Technology environment and the banking world is very necessary to obtain optimal results. There are 2 (two) things that need to be considered, namely: (1). Platform Sharing; and (2). Cooperation in the Financial Institution and Non-Financial Institution environment. talent field, especially Human Resources to be able to adapt to digitalization, each institution, especially banking, has a policy, namely the need for HR is reduced. The Human Resources needed are those who are intelligent and proficient in technology so that they have the potential to guarantee the sustainability of a sustainable financial ecosystem.

To determine the extent of the role of digital transformation competence of human resources as banking implementers at BPR banks in supporting a sustainable financial ecosystem, a study will be conducted based on a literature study.

B. THEORETICAL REVIEW

Utilizing technology to drastically alter organizational performance is necessary for digital transformation (Naimi-Sadigh et al., 2021; Thakor, 2020) which also necessitates the crucial assistance of executives and qualified staff. Therefore, both technology and people are needed for digital transformation (Nadkarni & Prügl, 2021), and enhances organizational performance, particularly in creative organizations Liu et al., (2023), which stimulates innovation momentum (Peng & Tao, 2022). Digital transformation might be regarded as a pervasive challenge in the banking sector (Diener & Spacek, 2021). In the second stage, banks started to create what is known as internet finance after integrating traditional IT hardware and software into their operations (digitization stage) (Zuo et al., 2021). Understanding the process of digital transformation is one of the primary internal variables. The communication that is a part of the process of digital transformation is another significant internal aspect.

Digital transformation is a change caused or influenced by the use of digital technology in every aspect of human life. (Vassilakopoulou & Hustad, 2023). Digital transformation as the use of technology to generally improve the performance or reach of a company. Nadkarni and Prügl, (in Yadewani, 2025). Furthermore, digitalization must be able to create new, more

sophisticated business models and be able to adapt to the business environment by changing the value offered to customers. (Priyono et al., 2020).

Effective HR development strategies include technology-based training and education, as suggested by Ridwan (2024) in utilizing digital platforms to improve literacy and skills. In addition, improving digital infrastructure is also needed to support better connectivity, as proposed by Caprara & Caprara (2022). The implementation of digital technology in HR management can improve the efficiency and effectiveness of the organization. On the other hand, a harmonious organizational climate with leadership support and knowledge transfer is an important element in developing competitive HR. Digital transformation also changes the recruitment and orientation process of the workforce, where technology-based evaluations help organizations identify individual potential, as described by Toyibah et al. (2024) through a STEAM-based approach. With these challenges, organizations need to provide intensive training and create a supportive work climate to ensure that HR is able to cope with rapid changes.

Indonesian HR must continue to develop their competencies in order to compete globally. By combining technology-based HR development strategies, intensive training, and adaptive leadership, organizations can achieve sustainability without neglecting the human aspect. With good synergy between technology and humans, organizational goals can be achieved optimally. Digital competence is the ability of human resources to master technology and use it effectively. In the digital era, technology is a very important tool in carrying out daily work. Human resources need to be able to use technology well and master the applications and software used in their work. The ability to adapt to the digital era is changing very quickly and is always developing. Therefore, human resources need to be able to adapt to these changes and develop new relevant abilities (Ayyas, 2024).

C. METHODS

The method used in this writing is a literature study by looking for sources of theory and references that are relevant to the problems found. Relevant sources of theory and references can be searched through various written sources, whether in the form of books, articles, journals, or documents that are relevant to the problems studied, so that they can strengthen the existing arguments.

This study is a qualitative study using the Preferred Reporting Items for Systematic Reviews and MetaAnalyses (PRISMA) framework (Moher et al., 2009) as a method to find relevant articles and select peer-reviewed articles for review. The articles were obtained from the Sinta and Scopus databases that ensure the excellence of the papers published in the database.

The process of making a systematic literature appraisal (PRISMA) consists of four steps: 1). Identifying journals to be included in the meta-analysis; 2). Screening, filtering or selecting data; 3). Eligibility, determining which articles will be used as material for the literature appraisal; and 4). Inclusion, combining and reporting the results.

Identification Identification is a process that aims to examine and analyze; in this process, the author identifies the research problem (research problem) to determine the quality of the research (Mohamed et al., 2020 in Haddaway 2022). Screening Screening, also known as screening, is a process that allows articles to be included or excluded based on criteria set by the author (Mohamed et al., 2020 in Haddaway 2022). Eligibility The eligibility stage is an examination of the eligibility of the article. All articles are checked to ensure that they meet the inclusion criteria and are in line with the objectives of the current study (Mohamed et al., 2020 in Haddaway 2022). Inclusion Included is the last stage of the PRISMA (Preferred Reporting Items for Systematic Reviews And Meta-Analyses) flow diagram. Articles should be included after meeting the analysis requirements (Mohamed et al., 2020 in Haddaway 2022).

The systematic review stages can be seen in Figure 2 below.

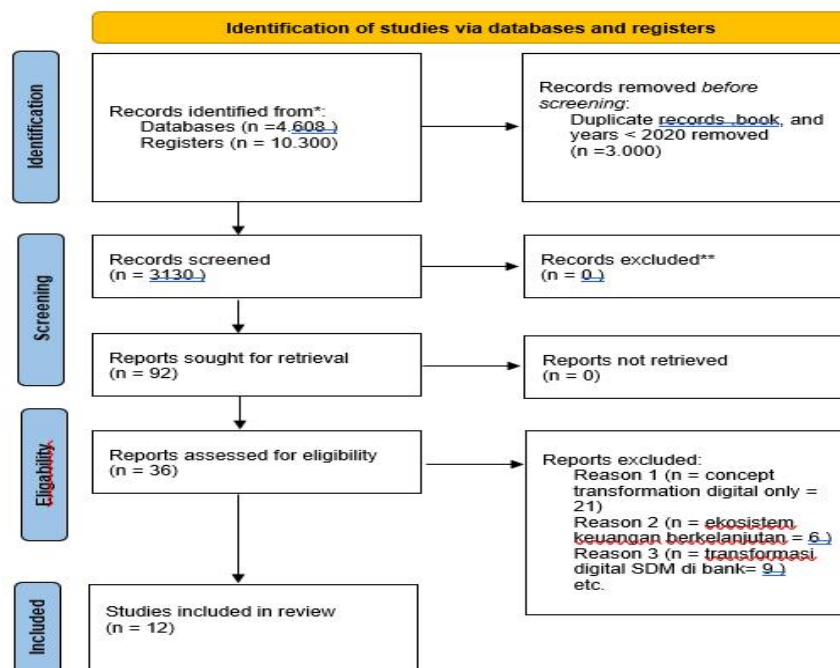


Figure 2. Systematic Review Stages

The object of this research is the digital transformation competency of HR that drives the digital transformation of BPR towards a sustainable financial ecosystem. The taking of digital transformation competency as the object of research has reasons for changes in banking which used to be conventional, now starting to be computerized. Research Question research questions are made based on the needs of the selected topic. Search Process or search process is used to obtain relevant sources and other related references. The data used is only related to digital HR competency, digital transformation and sustainable financial ecosystem.

Establishing and defining the inclusion and exclusion criteria to carry out the systematic review process aims to minimize certain types of bias in the information extraction that will be obtained from the articles identified from the search strategy and to help obtain eligible articles that are significantly related to the research question. In this context, several researchers (Redondo et al, 2019; Benavides et al, 2022) cite the need to construct inclusion and exclusion criteria that define a search focused on what is truly wanted to be discussed in the systematic review after locating scientific papers through the search method.

In the initial identification stage, 4,608 scientific articles have been successfully selected. Then, the "inclusion criteria and exclusion criteria" described in the previous section were applied, resulting in a total of 92 articles at the feasibility stage. Finally, in the last stage, articles that truly focused on the research questions were evaluated, resulting in 36 articles, which described the digital transformation competency of human resources, and the sustainable financial ecosystem. Meanwhile, only 12 articles that examined the role of digital transformation competency of human resources, and the sustainable financial ecosystem met.

Table 1. List of Articles

Focus	Research methods	Number of articles
Human Resources Digital Transformation Competence	Qualitative Comparative Analysis	8
Sustainable Financial Ecosystem	Qualitative	3
The Role of Human Resources Digital Transformation Competence in Sustainable Financial Ecosystem	Qualitative/ Quantitative	1

D. RESULTS

The rapid advancement of digital technology is changing the way organizations manage their workforce (Mardiyah et al., 2024). According to a McKinsey report (2021), around 70% of global companies have adopted digital technology in their operations, digitizing HR management is becoming an increasingly crucial aspect in increasing organizational productivity and competitiveness (Mckinsey, 2021). This shift has redefined the recruitment process, performance management, training, employee development, and work patterns, which are leaning towards hybrid or remote arrangements. In addition, it has increased employee expectations regarding work-life balance, forcing organizations to adjust their management strategies.

Digital transformation requires supporting digital competencies so that there are no errors in its efficient operation. The errors that may arise due to the limitations of digital skills of human resources that are oriented towards practice include: (1) operational skills in the form of computer software and hardware operations, (2) formal skills related to device characteristics, (3) information skills that are able to critically evaluate various media, and (4) strategic skills related to the capacity of interests (Deursen, 2014 in Rachmawati, 2023).

Acceleration of digital information technology requires skills in managing digital-based media both in terms of knowledge skills, interpersonal skills and communication to be able to maintain engagement in interacting digitally with customers. Digital skills include "a combination of behavior, expertise, knowledge, work habits, character, disposition, and critical understanding". Thus, it includes not only technical skills but also cognitive and non-cognitive skills, soft skills such as interpersonal skills and communication skills (Development, 2017).

Research by Bajraliu (2023) shows that adopting digital transformation in HR management can increase productivity by up to 30% (Bajraliu & Qorraj, 2023). In addition, research conducted by PwC (2023) found that companies that use digital technology in HR experience a 25% increase in employee retention and a 40% increase in job satisfaction (PwC, 2023). The importance of digital skills continues to increase as technology continues to advance. In today's workplace, skills such as technological literacy, data analysis, and proficiency in using digital devices are essential. Recruitment and HR management must shift to a competency-based approach to improve overall effectiveness in human resources. To develop for the better, organizations need to foster a culture that encourages innovation, collaboration, and continuous learning (Kuswati & Setyawan, 2016). According to research conducted by Zahra (2025), digital transformation has a major impact on human resource management (HR) (Aprillianti et al., 2025).

Following the developments that have occurred, one of the steps taken by BPR to overcome the challenges faced is to collaborate with the Komunal technology platform to channel deposits to BPRs in Indonesia (Nisa, et al., 2025). The results of the collaboration have resulted in increased access to financial services by maximizing digital transformation. The

challenges that have been anticipated through digital transformation can be seen in the following flow diagram.

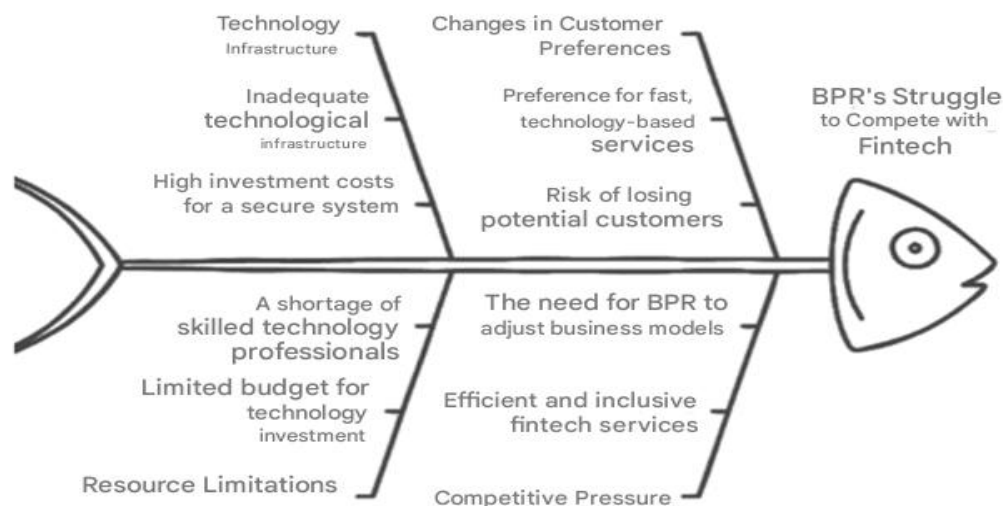


Figure 3. BPR Digital Transformation

A real example of what BPR has done to respond to digitalization is developing a mobile banking service that provides convenience to customers in making transactions without having to come to the BPR office. Other activities carried out as a form of digital transformation are carried out by BPR by building a back-end system that aims to accelerate the loan administration process and increase the accuracy of customer data with the main goal of increasing data security and smooth operational processes. BPR instills the ESG (Environment, Social, Governance) principle in operations that support the realization of a growing local economy that supports the regional economic ecosystem (Nisa, et al., 2025).

For future development, BPR needs to look at collaboration with Fintech. One of the most promising sectors of the economy in 2016 is financial technology, or FinTech. Globally, the FinTech revolution is improving finance thanks to a flood of start-ups with creative new income and business models, as well as new goods and services. These FinTech firms provide consumers with a range of financial services that were formerly the sole domain of banks. (Raharjo, 2021). This requires the preparation of competent human resources to be able to operate it. Digital developments are continuing to lead to digital currencies, one example being bitcoin. Although there may be possibilities and ways to exchange value, most people concur that the development of supporting distributed ledger technology will provide the true value. When used in conjunction with digital currencies, distributed ledgers enhance the documentation of ownership of non-financial assets and may serve as a foundation for future developments aimed at cutting costs and expediting transactions.

E. CONCLUSION

In conclusion, BPR's human resources' digital competence—which includes not just technical skills but also cognitive, interpersonal, and strategic digital abilities—is crucial to the company's success in its digital transformation. BPR can operate digital systems more efficiently, lower operational errors, improve service quality, and increase financial inclusion by strengthening these competencies. BPR is making progress toward a more sustainable financial ecosystem, as evidenced by current initiatives like mobile banking, system modernization, and ESG-based practices. Increased cooperation with FinTech, preparedness for new technologies like distributed ledger systems, and ongoing improvement of digital capabilities are all necessary for future competitiveness. BPR can enhance its role in creating a

robust and sustainable financial ecosystem through innovation-driven strategies and strong digital competency.

Due to its reliance on secondary data and literature that was published within a particular time frame, this study may not accurately reflect the most recent advancements in digital transformation within BPRs. Additionally, the review mainly concentrates on conceptual and empirical research on digital HR competency, possibly leaving out information from industry reports, legal documents, and unpublished studies that might offer a more comprehensive viewpoint. Furthermore, since different institutions have different levels of infrastructure support, digital readiness, and regulatory constraints, regional differences in the operational context of BPRs may affect the findings' applicability. These drawbacks point to the necessity of conducting more thorough and situation-specific research to confirm the conceptual connections covered in this study.

In order to gain a deeper understanding of the true digital competency of BPR employees and how these competencies directly impact digital transformation outcomes, future research should include primary data collection methods like surveys, interviews, and case studies. To find particular digital challenges and best practices, it is also advised to investigate comparative studies between BPRs and other financial institutions. Researchers could look more closely at how leadership, organizational culture, and regulatory support shape BPRs' digital readiness. Future research can also incorporate cutting-edge financial technologies like distributed ledger technology, digital currencies, and AI-driven decision systems to evaluate their possible effects on BPR operations. Stakeholders will be able to create more successful plans for improving digital competency and promoting sustainable digital transformation if these areas are strengthened.

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