

The Role of Digital Technology in Money Management on The Performance and Productivity of Bank Indonesia's Human Resources

Arief Kurniawan ¹⁾ & Widodo ²⁾

¹⁾ Faculty of Economic, Universitas Islam Sultan Agung (UNISSULA) Semarang, Indonesia, E-mail: ariefkurniawan.std@unissula.ac.id

²⁾ Faculty of Economic, Universitas Islam Sultan Agung (UNISSULA) Semarang, Indonesia, E-mail: widodo@unissula.ac.id

Abstract. The Indonesian banking industry currently faces various challenges, not only from competition among banks but also from the digitalization of banking. The implementation of digital technology in the banking sector will undoubtedly boost performance. The better the use of technology within a company, the higher employee performance, significantly impacting productivity. This research is an explanatory research with a quantitative approach. The population in this study were 526 frontline employees of Bank Indonesia. The sample of this study was 130 frontline employees of Bank Indonesia, calculated using the Hair formula. The data collection technique used a questionnaire. In this study, the data analysis used the SEM-PLS method with SmartPLS (Partial Least Square) software. The results of the study show that: 1) The application of digital technology has a positive and significant effect on HR performance, meaning that the higher the digital technology, the HR performance can increase because the work process becomes more efficient, effective, and accurate. 2) The application of digital technology has a positive and significant effect on HR productivity, meaning that the higher the digital technology, the higher the HR productivity, 3) HR performance has a positive and significant effect on HR productivity. This means that the better the performance of human resources (HR), the HR productivity will also increase, resulting in higher, more efficient, and more effective performance in achieving company goals. 4) HR performance can mediate the positive and significant effect of the application of digital technology on HR productivity, meaning that the higher the application of digital technology, the better the HR performance, and then the higher the HR productivity.

Keywords: Digital Technology; HR Performance; Productivity.

1. Introduction

The Indonesian banking industry currently faces various challenges, not only in the form of competition between banks but also the digitalization of banking. The rapid development of information technology (IT) that influences consumer patterns and behavior has had an impact on the banking industry, namely the demand for the development of digital banking products and services (Puspitadewi, 2019). The existence of digital technology makes it easier for banks to store, record, and retrieve customer data, thus helping them maintain good relationships with consumers, resolve consumer complaints, and match products to suit consumer needs (Wirjoatmodjo, 2017).

The implementation of digital banking technology requires adjustments not only to new and existing banking products and services, but also to the readiness of human resources (HR) within the banking industry (Fariyah, Sari & Sumriyah, 2023). In this regard, the digital revolution requires HR with in-depth specialized expertise, a broad understanding of and the ability to solve various problems, and operational personnel, particularly in the field of information technology (Banking Professional Certification Institute, 2018).

The application of digital technology in banking will undoubtedly boost performance. Human resource performance reflects an organization's success in utilizing its resources to achieve its stated goals (Hamidah & Putra, 2024). Performance reflects the success of achieving targets; the closer the target is, the higher the performance. In this digital era, employees need to be given the opportunity to shift from replication to creation. Stimulating employees' brainpower can create greater competence, balance, and well-being while enhancing creativity, innovation, and becoming creators in the world of technology (Shidqi, Darmastuti & Wicaksono, 2023). In this regard, banking digitalization, supported by strong capabilities, will undoubtedly make banking performance more effective and efficient. This is inseparable from the existence of digital technology, which is considered capable of changing employee work habits, which are shifting to digital systems (Choirinisa & Ikhwan, 2022). Furthermore, it explains that the existence of digital technology has a still-low impact on employee productivity.

Digitalization This financial management not only improves the efficiency and accuracy of transactions, but also has a significant impact on overall employee performance. (Supriyanto, 2021). The better the use of technology within a company, the better employee performance will be, significantly impacting work productivity (Amalya et al., 2021). Performance development is a key determinant of employee productivity (Ismail, 2022). Improving individual employee performance will boost overall human resource performance, which is reflected in increased productivity (Lusiana, 2018).

The results of previous research related to the application of digital technology to employee performance and the application of digital technology to productivity still leave controversy. Among them are research results that show that digitalization of company systems does not have a significant effect on employee productivity (Shidqi, Darmastuti & Wicaksono, (2023)). Other research shows that digitalization has a significant effect on employee performance

(Wike & Fika, 2018). Research conducted by Ningsih (2024) shows that technology has a positive effect on employee productivity in Indonesia.

Good human resource performance will certainly increase the level of work productivity (Puspitadewi, 2019). Siagian (2017) stated that work productivity is the human desire and effort to always improve the quality of life and livelihood in all areas. Furthermore, Sedarmayanti (2018) stated that to achieve maximum work productivity, companies must ensure the selection of the right people and the conditions that enable them to work optimally. The level of employee work productivity can be measured through employee effectiveness and efficiency in their work (Puspitadewi, 2019).

In recent years, the Indonesian banking sector, including Bank Indonesia, has undergone significant changes related to the implementation of digital technology, particularly in financial management. This digitalization has not only impacted the efficiency of financial transactions but also influenced employee performance and productivity. As an institution that plays a crucial role in the Indonesian economic system, Bank Indonesia faces significant challenges in leveraging digital technology to improve organizational performance and human resources (HR).

Bank Indonesia has developed the Indonesian Payment System Blueprint (BSPI) 2025 to promote the integration of the national digital financial industry. This initiative aims to achieve broader economic and financial inclusion. However, the implementation of digital technology also brings new challenges, particularly regarding employee digital competency and work effectiveness.

2. Research Methods

This research uses quantitative research methods. It is called quantitative research because the data collected in this study is analyzed using statistical analysis (Sugiyono, 2018). Based on the research objectives, this type of research is explanatory research, namely research that proves the existence of cause and effect and relationships that influence or are influenced by two or more variables being studied.(Umar, 2019)The purpose of explanatory research is to test hypotheses and examine the influence of independent variables on the dependent variable, namely the influence of the application of digital technology in money management on the performance and productivity of Bank Indonesia's human resources.

3. Results and Discussion

3.1. The Impact of Digital Technology Implementation on HR Performance

Based on the path coefficient results, it is known that the P-Values that determine the influence of digital technology implementation on HR performance are $0.000 < 0.05$ and the T-Statistics value $(8.563) > 1.96$. Meanwhile, the original sample has a value of 0.688 (positive). This indicates that the implementation of digital technology has a positive and significant effect on HR performance. These results support the first hypothesis, which means H1 is accepted.

The results of the study show that the application of digital technology has a positive and significant effect on HR performance, meaning that the higher the digital technology, the

better HR performance can be because the work process becomes more efficient, effective, and accurate.

According to Shandler (2024), digital technology aims to significantly increase company productivity, both in terms of work efficiency and final results, so that its benefits are truly felt in company operations. The use of digitalization must be able to improve performance. Digitalization encompasses various aspects, from business process automation, cloud-based system integration, to the use of applications and software that support administrative and operational tasks (Siregar & Pradesyah, 2023). The use of these digital systems allows organizations to simplify workflows, reduce human error, and provide faster and more accurate access to information. This certainly affects HR performance (Hamidah & Putra, 2024). With the digitalization of this system, it is hoped that it will make it easier for employees to complete their work and improve employee performance (Shidqi, Darmastuti & Wicaksono, 2023).

StudyWike and Fika (2018) found that digitalization significantly impacts employee performance. Previous research by Wiranda et al. (2020) demonstrated the influence of management information systems on employee performance. Previous research by Karlinda & Sari (2022) concluded that the implementation of technology has a positive effect on employee performance. The adoption of new technology enables employees to work more efficiently and accurately, thus supporting the achievement of overall company targets. Digital technology significantly impacts and improves human resource performance by improving processes, improving decision-making, and empowering employees with the skills and motivation to achieve organizational goals.

The application of digital technology has a positive impact on performance by increasing efficiency and productivity through automation and faster access to information, increasing innovation by creating new products and services, and expanding the reach of access to information and opportunities for individuals and organizations. The implementation of digital technology in a workplace is expected to help employees complete their work more quickly and accurately (Shidqi, Darmastuti & Wicaksono, 2023). A digitalized operational system refers to the application of digital technology in daily operational processes, aiming to improve efficiency, accuracy, and speed in data and information management (Okkonen, 2019).

1. The Impact of Digital Technology Implementation on Human Resource Productivity

Based on the path coefficient results, it is known that the P-Values that determine the effect of digital technology implementation on HR productivity are $0.000 < 0.05$ and the T-Statistics value $(6.495) > 1.96$. Meanwhile, the original sample has a value of 0.552 (positive). This indicates that the application of digital technology has a positive and significant effect on HR productivity. These results support the second hypothesis, which means H2 is accepted.

The results of the study show that the application of digital technology has a positive and significant effect on HR productivity, meaning that the higher the digital technology, the

higher the HR productivity.

Technology plays a crucial role in increasing workforce productivity. The application of digital technology is a work method designed to achieve effectiveness and efficiency. With adequate capabilities to carry out digital-based work activities, the work processes they undertake become more effective, both in terms of material and non-material (Hidayati et al., 2019). Technology can help workers work more efficiently and effectively. Technology can also impact workforce absorption, as the higher the technology used, the shorter the production time, resulting in lower workforce absorption (Ningsih, 2024).

According to research conducted by Ningsih (2024), digital technology has an impact on labor productivity in Indonesia. The appropriate use of digital technology plays a significant role in increasing worker productivity. The advantages of using appropriate technology include timely completion of production processes, greater production volumes, and higher quality. This is in line with research by Laura et al. (2024), which shows that technological skills have a significant impact on the work productivity of civil servants in the Human Resources Evaluation and Development Division. Digital technology can help automate repetitive tasks, allowing HR to focus on more important tasks and increase work efficiency. Research conducted by Wulandari, Ali, and Hendayana (2024) shows that increased use of technology can have a positive impact on increasing employee work productivity.

The implementation of digital technology in companies can have a positive impact on work productivity. Appropriate implementation of digital technology will increase employee productivity in completing tasks (Shidqi, Darmastuti & Wicaksono, 2023). The right technology will significantly help maintain work productivity levels (Amalya et al., 2021). When working, an employee can use digital technology as a tool to accelerate processes, coordination, and communication, resulting in higher-quality products at a faster rate, which ultimately improves overall performance. Higher productivity levels indicate higher employee effectiveness (Choirinisa & Ikhwan, 2022).

By integrating digital technology, companies can help create a more efficient and productive work environment (Wulandari, Ali & Hendayana, 2024). The use of advanced technology enables employees to work faster and more accurately, thereby improving output and work quality. Technology has a significant impact on productivity, as evidenced by several previous studies. Malikhah et al. (2023) and Yani et al. (2021) show that the greater the technological transformation a company undertakes, the greater the impact on employee productivity.

2. The Influence of HR Performance on HR Productivity

Based on the path coefficient results, it is known that the P-Values that form the influence of HR performance on HR productivity are $0.000 < 0.05$ and the T-Statistics value $(3.880) > 1.96$. Meanwhile, the original sample has a value of 0.336 (positive). This indicates that HR performance has a positive and significant effect on HR productivity. These results support the third hypothesis, which means H3 is accepted.

The results of the study indicate that HR performance has a positive and significant effect on

HR productivity. This means that the better the performance of Human Resources (HR), the higher the productivity of HR, resulting in higher performance, greater efficiency, and greater effectiveness in achieving company goals. Employee performance has a positive and significant effect on HR productivity, as high performance results in greater efficiency, effectiveness, and productivity for the organization. Improved employee performance can be achieved through various human resource management (HRM) efforts such as training, skills development, a comfortable work environment, regular evaluations, and an effective reward system, all of which contribute to the achievement of organizational goals.

Performance is the result of employee work in achieving predetermined goals. Performance refers to quality and quantitative work results, while productivity refers to the efficient use of resources to produce output. Good performance indicates that employees are able to produce work output in quality and quantity according to their duties and responsibilities. Performance improvement is one way to increase employee productivity because it can evaluate individual performance with the aim of developing and directing individuals so they can improve their performance (Lusiana, 2018). Improving individual employee performance drives overall human resource performance, which can increase productivity (Ismail, 2022). Objective performance assessments will provide appropriate feedback, and through appropriate feedback, it is hoped that behavioral changes will occur towards increased work productivity (Fitriana, 2022). Good HR performance can increase output and work results, thereby increasing HR productivity.

This research aligns with research conducted by Yunitasari, Handayani, and Veronika (2021), which found that performance has a significant positive effect on employee productivity. When performance improves, productivity increases. For example, if an employee becomes more skilled and efficient (improves their performance), they will produce more or better results in the same amount of time, thereby increasing productivity. High performance directly impacts increased efficiency and effectiveness within an organization. This means work is completed better, resources are utilized optimally, and company goals are achieved to the fullest. Therefore, good human resource performance is a crucial factor in increasing human resource productivity. This is because improved human resource performance will also increase human resource productivity.

3. Indirect Influence

Indirect effect In PLS-SEM, the indirect effect is used to test the relationship between independent and dependent variables mediated by other variables. The indirect effect is evaluated based on the p-value and T-statistic generated from bootstrapping. If the p-value is less than or equal to 0.05 and the T-statistic is greater than 1.96, the indirect effect is considered statistically significant.

Indirect Effect (Specific Indirect Effect)

Path Coefficient	Original sample (O)	Sample mean (M)	Standard Deviation (STDEV)	T statistic s	P values	Information
Implementation of Digital Technology -> HR Performance -> HR Productivity	0.231	0.231	0.070	3,301	0.000	Able to mediate

Based on the data presentation in the table above, it can be seen that the P-Values of the specific indirect effect are $0.000 < 0.05$ and the T-Statistics value (3.301) > 1.96 with the original sample value of 0.231 (positive). This means that HR performance can mediate the positive and significant influence of the application of digital technology on HR productivity.

a. *R-square(R2)*

All variance in the construct explained by the model is represented by R-Square. The output from determining the R-Squares value is as follows:

R-Square Value

No	Variables	R-Squares	Adjusted R-Squares
1	HR Performance	0.473	0.467
2	Human Resource Productivity	0.674	0.667

Based on table, the Adjusted R-square value of HR performance is 0.467, meaning that 46.7% of variations or changes in HR performance are influenced by the application of digital technology, while the remaining 53.3% are influenced by other variables not studied. The Adjusted R-square value of HR productivity is 0.667, meaning that 66.7% of variations or changes in HR productivity are influenced by the application of digital technology and the remaining 33.3% of HR performance is influenced by other variables.

b. *F-Square(F2)*

The F2 value criteria consist of three classifications: 0.02 (small/poor); 0.15 (moderate/sufficient); and 0.35 (large/good) (Setiaman, 2023). The following are the results of the F-square test in this study:

F-Square Value

Variable Relationship	f Squares	Substantive influence
HR Performance -> HR Productivity	0.183	Enough
Implementation of Digital Technology-> HR Performance	0.897	Big
Implementation of Digital Technology-> HR Productivity	0.493	Big

Based on the table above, we can see a large substantive influence on the variable of digital technology implementation on HR performance (0.897) and digital technology implementation on HR productivity (0.493). Meanwhile, a fairly large substantive influence occurs on the variable of HR performance on HR productivity (0.183).

c. *Goodness of Fit*

Based on the data processing that has been carried out using the smart PLS 4.0

Results of the Goodness of Fit Model Test

No	Structural Model	Cut-Off Value	Estimated	Information
1	SRMR	< 0.10	0.061	Fit
2	d_ULS	> 0.05	0.337	Fit
3	d_G	> 0.05	0.292	Fit
4	Chi-Square	>X2table (df = 127; X2table =154.3015)	164,354	Fit
5	NFI	Approaching 1	0.861	Fit

The results of the PLS model goodness of fit test in the table above indicate an acceptable model fit. This result indicates that the model has a good level of fit with the data, meaning the proposed model accurately represents the relationships between variables in the data.

4. Indirect Influence

The results of the study show that HR performance can mediate the positive and significant influence of the application of digital technology on HR productivity, meaning that the higher the application of digital technology, the better HR performance, and then the higher HR productivity, this is because competent human resources who adapt to digital technology will be more effective in increasing efficiency, productivity, and innovation, thereby creating a competitive advantage for the organization.

Digital technology requires employees to possess adequate digital skills. Strong HR performance in developing these skills will ensure employees are able to optimally utilize technology, ultimately increasing productivity. By increasing productivity, companies can help create a more effective and efficient work environment. Higher productivity enables employees to complete their tasks more quickly and accurately, thereby improving overall work output. Encouraging employees to increase productivity can provide more relevant information and better results in every work process. Through well-managed HR performance, the implementation of digital technology can increase efficiency and effectiveness in various HR processes, such as recruitment, training, and performance management (Kumbaladewi et al., 2021).

Digital technology supports increased work efficiency and effectiveness, which can then be translated into improved employee performance and organizational productivity. If a company is able to increase individual productivity, team productivity, and provide support and a conducive work environment, it will improve employee performance through 1) employee work quantity, namely the time achieved by employees in carrying out work each day, 2) employee work quality, namely employee work results that are measured effectively and efficiently will be achieved, and 3) timeliness of work completion, namely the deadline given to complete the work (Wulandari, Ali & Hendayana, 2024). Research by Febriani and Hartini (2023) revealed that digital technology can increase high productivity and thus play a very important and significant role in improving employee performance in an organization. When employees are able to work efficiently and effectively, their contribution to company goals becomes greater, which in turn has a positive impact on overall company performance (Budi, 2022).

Human resource performance acts as a bridge between the implementation of digital technology and increased productivity. Without adaptive and competent human resource performance, the positive impacts of digital technology may not be fully realized. Therefore, organizations need to focus on developing digital competencies and creating an organizational culture that supports the use of technology to achieve optimal productivity. Thus, human resource performance acts as a crucial bridge connecting the implementation of digital technology with increased human resource productivity, enabling organizations to leverage technology strategically to achieve their business goals.

4. Conclusion

Based on several analytical studies and research discussions entitled "The Role of Digital Technology in Money Management on the Performance and Productivity of Bank Indonesia's Human Resources", the following conclusions can be drawn: 1. The application of digital technology has a positive and significant impact on HR performance, meaning that the higher the digital technology, the better HR performance can be because work processes become more efficient, effective and accurate. 2. The application of digital technology has a positive and significant impact on HR productivity, meaning that the higher the digital technology, the higher the HR productivity. 3. Human resource performance has a positive and significant impact on human resource productivity. This means that better human resource (HR) performance will increase HR productivity, resulting in higher performance, greater efficiency, and greater effectiveness in achieving company goals. 4. HR performance can mediate the positive and significant influence of the application of digital technology on HR productivity, meaning that the higher the application of digital technology, the better HR performance, and then the higher HR productivity.

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