

The Influence of Digital Leadership and Innovative Culture on Innovation Performance Mediated by Digital Innovation in PT Employees. Bank Central Asia Tbk in Central Jakarta

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Abstract

This research aims to analyze the influence of Digital Leadership, Innovative Culture, Digital Innovation, and Innovation Performance on PT employees. Bank Central Asia Tbk in Central Jakarta and the relationship between these variables. This research method uses correlation research with cross-sectional data, involving 8 branch offices of PT. Bank Central Asia Tbk in Central Jakarta. The variables studied include Digital Leadership, Innovative Culture, Digital Innovation, and Innovation Performance. The results of the analysis show that Digital Leadership and Innovative Culture have a positive effect on Digital Innovation, which in turn has a positive effect on Innovation Performance. However, Digital Leadership does not have a significant direct influence on Innovation Performance. These results show the importance of applying Digital Leadership principles and an innovative culture in supporting the effective adoption of digital technology, which ultimately improves the company's innovative performance.

Keywords: Digital Leadership, Innovative Culture, Digital Innovation, Innovation Performance

INTRODUCTION

Revolution is defined as a change in social and cultural aspects, as well as general habits of society related to the basis of society's life caused by the development and progress of science and technology. The Society Era 5.0 revolution is a major shift in the social and economic life of society which involves industrial economic activities in all sectors. This shift can be known as a trend code for digitalization and the exchange of the latest technological data and information (Lestari & Fitriani, 2024)

In this era of society 5.0, the need for every organization or company to compete with its competitors is increasing, especially in utilizing existing technological advances. The real thing that can be seen is the company PT GoTo Gojek Tokopedia Tbk which offers the first online motorcycle taxi service in Indonesia through an application provided on *PlayStore* (Ikhsan, 2023). The process that occurs at Gojek includes digital transformation within the company, whether part or all of the company. Then this is assessed as *Innovation Performance*. It is not only the company PT Go To Gojek Tokopedia Tbk that needs *Innovation Performance* but financial institutions such as banks are being disrupted by FinTech companies (Citigroup, 2016) . If banks do not take steps to use technology to automate their services in every aspect of their operations, they have the potential to lose out to FinTech companies that promise customers convenience, savings and speed (Al Issa & Omar, 2024).

Innovation Performance is the combined result of several factors such as a linear and holistic approach and the diffusion of innovation which together influence the

achievements and results obtained from innovation (Robertson et al., 2023) . *Innovation Performance* in the era of *society 5.0* is really needed by companies because it increases company value and decision-making processes (Ponta et al., 2021).

In improving *Innovation Performance*, changes are needed towards a better direction in terms of human resources and culture within the company. In human resources, leadership is one aspect that greatly influences the development of a company because a leader will be the decision maker for the continuity of a company (Kollmann et al., 2023) Leadership style will influence the performance, motivation and effectiveness of employees in the company because a leader will be a role model who motivates people in the company (Hensellek & Simon, 2020). Leadership today does not depend on a leader who is at work but follows technological developments and changes in management within the company, thereby introducing *Digital Leadership*. (Hlupic, 2014). *Digital Leadership* is a complex construct that aims for a digital customer-centric business model by changing the role, skills and style of digital leaders, realizing a digital organization including governance, vision, values, structure, culture and decision processes, and adapting people management, virtual teams, knowledge, and communication at the individual level (Eberl & Drews, 2021). The characteristics of *Digital Leadership* are based on the NOPA+ model which shows that *network, openness, participation, agility* and *trust* together indicate the success of *Digital Leadership* (Petry, 2018) . The difficulty in *Digital Leadership* lies in the large burden of responsibility of digital leaders towards the company, employees and other stakeholders (Hensellek & Simon, 2020) . *Digital Leadership* also has a partial influence on the psychological well-being of employees (Dewi & Sjabadhyni, 2021). The aim of *Digital Leadership* is to realize transformation efforts within the company to lead to sustainable innovation by providing the support, resources and direction needed to achieve business goals on an organizational and individual scale (Araujo et al., 2021).

Continuing the aspects that influence the company, corporate culture is a shared commitment that is formed and aligns the goals of all employees in the company (Gürsoy, 2016) . A good company culture will help the company and employees to work in a structured manner towards a common goal. However, changes in company culture are always a challenge in building *an Innovative Culture* (Zemanova et al., 2022). *Innovative Culture* is a culture that is difficult to build and instill in every company employee because it is often misunderstood (McCausland, 2022). *Innovative culture* is defined as a culture that has creativity, orientation and dynamism (Gürsoy, 2016) . To build *an Innovative Culture*, there are several aspects that need to be considered, including creativity, freedom, teamwork and risk taking (Bendak et al., 2020). The success of building *an Innovative Culture* is also supported by resources such as time, money and encouragement (Soken & Barnes, 2014). *Innovative Culture* is influenced by informal forces and horizontal structures that exist within the company (Maulding et al., 2012). On the other hand, *Innovative Culture* mediates collaboration and success within the company (Raajpoot & Sharma, 2021).

Based on the previous explanation, *Digital Leadership* and *Innovative Culture* are indicators that influence a company's level of success. Therefore, the company's success will be seen from the company's *Innovation Performance*. This is proven by the research results of Novitasari et al (2021) which show that leadership has a positive influence on *Innovation Performance* and the research results of Hilmarsson et al (2013) which show that there is a strong relationship between *Innovation Culture* and *Innovation Performance*.

However, this is also accompanied by measurement of *Digital Innovation* as one of the variables which is thought to have a mediating influence in measuring *Innovation*

Performance. This is due to the need for companies to make decisions using data so that *Digital Innovation* plays an important role in creating more effective and efficient solutions and bringing about digital transformation change (Tulungen et al., 2022). *Digital Innovation* is the result and basis for the development of digital innovation which implies high scalability and leads to widespread participation and democratic innovation (Ciriello et al., 2018).

The difference in previous research conducted by Al Issa & Omar (2024) is in the research subject. In Hongyun et al (2023) research, the focus of the research was carried out on a number of MSMEs in Pakistan. Meanwhile, the novelty in this research lies in the sample that will be studied where the researcher will use a sample of employees at PT. Bank Central Asia Tbk in Central Jakarta, and added a mediating variable, namely Digital Innovation and the change from the industrial era 4.0 to the era of society 5.0 in 2024.

The aim of this research is to analyze various aspects related to Digital Leadership, Innovative Culture, Innovation Performance and Digital Innovation among PT employees. Bank Central Asia Tbk in Central Jakarta and the influence between these variables. The benefits of this research are especially for employees at PT. Bank Central Asia Tbk in Central Jakarta which can improve understanding and performance in adopting digital innovation, as well as for researchers who can expand insight and knowledge in this field. Apart from that, this research can also be a reference for future researchers who are interested in exploring the influence of Digital Leadership and Innovative Culture on Innovation Performance mediated by Digital Innovation.

Based on the explanation above, the following hypothesis is proposed:

H1: *Digital Leadership* has a positive influence on *Digital Innovation*.

H2: *Innovative Culture* has a positive influence on *Digital Innovation*.

H3: *Digital Innovation* has a positive influence on *Innovation Performance*.

H4: *Digital Leadership* has a positive influence on *Innovation Performance*.

H5: *Innovative Culture* has a positive influence on *Innovation Performance*.

H6: *Digital Leadership* has a positive influence on *Innovation Performance* which is mediated by *Digital Innovation*.

H7: *Innovative Culture* has a positive influence on *Innovation Performance* which is mediated by *Digital Innovation*.

RESEARCH METHODS

This research is a modification of previous research conducted by Al Issa & Omar (2024) and (Hongyun et al., 2023). The purpose of this research is to see how Digital Leadership and Innovative Culture impact Innovation Performance mediated by Digital Innovation at PT. Bank Central Asia Tbk located in Central Jakarta. PT. Bank Central Asia Tbk has 20 branch offices in the Central Jakarta area, but in this study only examined 8 PT branch offices. Bank Central Asia Tbk only. This research uses correlation research, which explains variables that are relevant to the existing problem. The data used is cross-sectional because it will only be conducted once in a certain period where the unit of analysis is individuals, namely employees at PT. Bank Central Asia Tbk located in Central Jakarta. The research setting used is a non-contrived setting because the research was conducted where work is generally located (Purwanza et al., 2022).

Variables in this research include Digital Leadership, Innovative Culture, Digital Innovation, and Innovation Performance. Digital Leadership, which is measured using 6 statement items, refers to digital leaders who understand technology and help employees understand the risks associated with the use of information technology (Erhan et al., 2022). Innovative Culture, measured by 3 statement items, highlights

employees' enthusiasm for being creative and creating new things, as well as the courage to take risky steps (MY-C. Chen et al., 2012).

Digital Innovation, which is a mediating variable, is measured with 9 statement items which are divided into three dimensions: Efficiency, Novelty, and Convergence (Xu et al., 2022). Innovation Performance, the dependent variable, is measured by 9 statement items which include improving quality in products and services, increasing efficiency, and success in introducing new products to the market (Carrasco-Carvajal et al., 2023; Espasandín-Bustelo et al., 2023; Gupta & George, 2016).

The Structural Equation Model (SEM) of this research is described as follows:

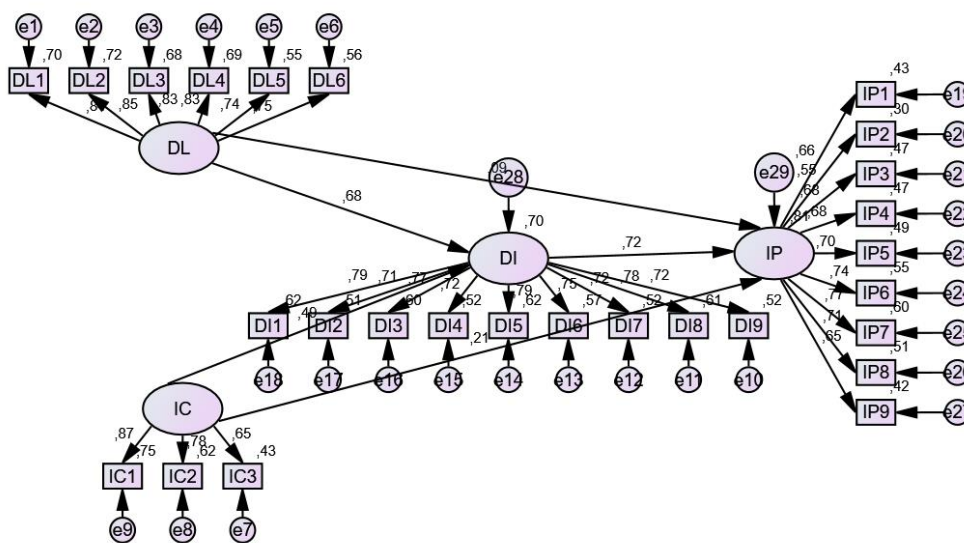


Figure 1. Structural Equation Models
Source: Data processed using AMOS

RESULTS AND DISCUSSION

A. Descriptive Statistics

Descriptive statistics is a method related to collecting or presenting data in order to provide useful information for researchers. Statistical results from the variables *Digital Leadership*, *Innovative Culture*, *Digital Innovation*, and *Innovation Performance* can be seen in the table below:

1. Digital Leadership Analysis

Table 1. Descriptive Statistics of Digital Leadership

No	Digital Leadership	Mean
1.	Technology-savvy digital leaders help employees in companies better understand the risks associated with the use of information technology.	3.97
2.	Digital leaders learn new technologies that can be leveraged to improve the way the company works.	3.97

3.	Together with all parties involved, digital leaders establish moral rules that must be followed in the use of information technology.	3.93
4.	Digital leaders play an important role in providing information that helps reduce difficulties in accepting new things related to information technology.	3.97
5.	Digital leaders talk about how technology can help colleagues better understand the organizational makeup of the workplace.	3.81
6.	Digital leaders teach employees how to use technology so they can participate more in realizing company goals.	3.95
Mean		3.93

Source: Data Processing Results

Based on table 1 above, it can be seen that the total average is 3.93, which means that respondents feel quite satisfied with the role of *Digital Leadership* at PT. Bank Central Asia Tbk in Central Jakarta. This shows that with the highest average value of 3.97, which means that respondent's feel quite satisfied that digital leaders understand technology and can help respondents understand the risks associated with technology, respondents feel satisfied that digital leaders learn technologies. new things to improve the way companies work, and respondents felt that digital leaders have an important role in providing information that helps reduce difficulties in accepting new things related to information technology.

2. Innovative Culture Analysis

Table 2. Descriptive Statistics of Innovative Culture

No	Innovative Culture	Mean
1.	I am enthusiastic about being creative and creating new things in this company.	3.79
2.	I need to try new things and take advantage of opportunities that arise at this company quickly.	3.94
3.	I will be rewarded for my courage in taking risky steps in this company.	3.60
Mean		3.77

Source: Data Processing Results

Based on table 2 above, it can be seen that the total average is 3.77, which means that respondents feel quite comfortable with the existence of *Innovative Culture* at PT. Bank Central Asia Tbk in Central Jakarta. This shows that the highest average value is 3.94, which means that respondents feel they are sufficient to try new things and take advantage of opportunities that arise in the company quickly.

3. Digital Innovation Analysis

Table 3. Descriptive Statistics of Digital Innovation

No	Digital Innovation efficiency	Mean
1.	I use digital technology to make work more efficient including in terms of products, research and development and communication.	3.94
2.	I use digital technology to save costs in all parts of the company such as in research and development, production and sales.	3.95

3.	I use digital technology to reduce confusion due to mismatched information by creating a digital platform that will make it easier to deal with various data.	3.97
Novelty		
1.	I leverage digital technology to create new offerings as part of our goals.	3.90
2.	I use digital technology to introduce new users to create value by building customized platforms and leveraging customer knowledge.	3.94
3.	I leverage digital technology to adopt new ways of working.	3.83
Convergence		
1.	I utilize digital technology to make the organization more organized.	3.85
2.	I utilize digital technology to develop more profitable ways of doing business.	3.98
3.	I utilize digital technology to forge new relationships with related parties and work together to create value.	3.97
Mean		3.92

Source: Data Processing Results

Based on table 4 above, it can be seen that the total average is 3.92, which means that respondents feel that the existence of *Digital Innovation* at PT is sufficient. Bank Central Asia Tbk in Central Jakarta. This shows that the highest average value is 3.98, which means that respondents utilize digital technology to develop more profitable business methods.

4. Innovation Performance Analysis

Table 5. Descriptive Statistics of Innovation Performance

No	Innovation Performance	Mean
1.	My company improves quality in products and services.	3.93
2.	My company is increasing its ability to make goods.	3.72
3.	My company saves materials and electricity used in each production unit.	3.61
4.	My company improves the way it works to be more efficient in saving costs and time.	3.97
5.	My company strives to make activities simpler so that practices within the organization become better.	3.88
6.	My company inspires employees to be more creative in their work.	3.89
7.	My company successfully introduces new products or services to the market earlier than our competitors.	3.84
8.	The new product or service my company offers is more successful than those offered by our competitors.	3.72
9.	Sales at my company are higher than our competitors.	3.62
Mean		3.79

Source: Data Processing Results

Based on table 6 above, it can be seen that the total average is 3.79, which means that respondents quite agree with the existence of *Innovation Performance* at PT. Bank Central Asia Tbk in Central Jakarta. This shows that the highest average value is 3.97, which means that respondents feel that their company is improving its way of working to be more efficient in saving costs and time.

B. Hypothesis Test Results

The results of this hypothesis test aim to test whether there is a positive influence between *Digital Leadership* on *Digital Innovation*, a positive influence between *Innovative Culture* on *Digital Innovation*, a positive influence between *Digital Innovation* on *Innovation Performance*, a positive influence between *Digital Leadership* on *Innovation Performance*, a positive influence between *Innovative Culture* on *Innovation Performance*, the positive influence of *Digital Leadership* on *Innovation Performance* which is mediated by *Digital Innovation*, the influence of *Innovative Culture* on *Innovation Performance* which is mediated by *Digital Innovation*. Hypothetical decision making is carried out with the following conditions:

1. If *the p-value* < 0.05 then, H_0 fails to be accepted, H_a is accepted, meaning the hypothesis is supported.
2. If *the p-value* > 0.05 then, H_0 is accepted, H_a fails to be accepted, meaning the hypothesis is not supported.

Analysis of the research hypotheses shows interesting results. First, Digital Leadership has a significantly positive effect on Digital Innovation, indicating that the role of leaders in guiding digital change is very important. Then, Innovative Culture also has a significant positive impact on Digital Innovation, highlighting the importance of a work environment that encourages creativity. Furthermore, Digital Innovation has a significant positive influence on Innovative Performance, emphasizing the importance of technology adoption in improving a company's innovative performance. However, the role of Digital Leadership on Innovative Performance was not significant, perhaps because other factors had a greater influence on innovative performance. Meanwhile, Innovative Culture has a significant indirect influence on Innovative Performance through the mediation of Digital Innovation, showing that an innovative work environment can improve innovative performance through technology adoption. In conclusion, to improve innovative performance, companies need to pay attention not only to digital leadership and innovative culture but also to the application of innovative technology in their business processes.

C. Discussion of Research Results

The discussion of each research result is as follows:

H1: *Digital Leadership* has a positive influence on *Digital Innovation*

Testing the first hypothesis concluded that there was a significant positive influence between *Digital Leadership* and *Digital Innovation*. This research supports previous research conducted by (Benitez et al., 2022; Bresciani et al., 2021; Fu et al., 2018) in their research it was stated that there was a positive and significant influence between *Digital Leadership* on *Digital Innovation*. Leaders must have technical and professional expertise as well as creative skills to process complex information to influence innovation. This describes employees at PT. Bank Central Asia Tbk Central Jakarta feels that a good *Digital Leadership* role will influence a high level of *Digital Innovation*. The reason is that if a *Digital Leadership* has four characteristics such as: encouraging innovation by being anticipatory, understanding digital and daring to take risks then the level of *Digital Innovation* possessed by PT employees. Bank Central Asia Tbk is also increasing or becoming more creative in developing *Digital Innovation* owned by its employees.

H2: *Innovative Culture* has a positive influence on *Digital Innovation*

Testing the second hypothesis concluded that there was a significant positive influence between *Innovative Culture* and *Digital Innovation*. This research supports

previous research conducted by Naveed et al (2022) and Slater et al (2014) in their research which states that there is a positive relationship between culture and innovation in different environments. This shows that implementing *Innovative Culture* at PT. Bank Central Asia Tbk allows it to encourage openness to new ideas and foster the ability to embrace complex technologies that underlie the development of new products or services (Ali & Park, 2016) . Apart from that, PT. Bank Central Asia Tbk in Central Jakarta must also develop a governance style that allows them to apply digital supporting factors such as culture and the ability to achieve *Digital Innovation* which must be applied to employees.

H3: *Digital Innovation* has a positive influence on *Innovation Performance*

Testing the third hypothesis concluded that there was a significant positive influence between *Digital Innovation* and *Innovation Performance*. This research supports previous research conducted by Hongyun et al. (2023), Khin & Ho (2019) and Nassani et al (2023) in their research stated that there is a positive influence between *Digital Innovation* and *Innovation Performance*. This shows that *Digital Innovation* has been proven to be the main driver of sustainable economic progress and contributes to the development of economic, social and environmental conditions, especially in high-income countries, so that technological innovation, including *Digital Innovation*, can provide real benefits in various aspects. Including banking companies, improving the performance and sustainability of innovation among their employees.

H4: *Digital Leadership* has no influence on *Innovation Performance*

Testing the fourth hypothesis concluded that there was no influence between *Digital Leadership* and *Innovation Performance*. This research supports previous research conducted by Gunawan et al (2023) where in their research it was stated that there was no influence between *Digital Leadership* and *Innovation Performance*. Wang et al (2022) indicate that there are several factors such as the organizational environment, company culture, or even a mismatch between *Digital Leadership practices* and the organization's specific innovation needs. Second, these results suggest the need for further exploration of other variables that may influence this relationship. These variables can be mediating or moderating variables such as technological capabilities, innovation climate, or organizational readiness for digital change. Another reason why *Digital Leadership* has no influence on *Innovation Performance* at PT. Bank Central Asia Tbk in Central Jakarta is First, even though PT. Bank Central Asia Tbk in Central Jakarta has implemented *Digital Leadership* principles, there may be obstacles in internalizing these values to all levels of employees. The implementation of digital technology and strategies often takes time to spread and be accepted evenly throughout the organization, especially in large companies such as PT. Bank Central Asia Tbk. Second, strict hierarchical structures and strong standard operating procedures may inhibit the flexibility and innovative initiative of lower-level employees. Innovation often requires room for controlled experimentation and failure, something that can be difficult to achieve in highly structured environments. Third, corporate cultural factors that may be more oriented towards stability and compliance than experimentation and rapid change may limit the adoption of digital innovations. As a result, even though there is strong *Digital Leadership at the top level*, *employees in the field may not feel its direct impact on their day-to-day innovation performance*.

H5: *Innovative Culture* has a positive influence on *Innovation Performance*

Testing the fifth hypothesis concluded that there was a significant positive influence between *Innovative Culture* and *Innovation Performance*. This research supports previous research conducted by Khattak et al. (2022) and Jun et al (2022) in their research stated that there is a positive and significant influence between *Innovative Culture* on *Innovation Performance*. This shows that culture is one of the most important elements in innovation management that can increase performance levels. So that in PT. Bank Central Asia Tbk in Central Jakarta that *Innovative Culture* can increase employee involvement, give them more opportunities to innovate, and support innovative initiatives through appropriate training and development. Abdul Halim et al (2015) stated in their research that it is very important for organizations to improve *Innovative Culture* so that all employees can be alert, creative and innovative to move the organization. This confirms that a strong *Innovative Culture makes employees more alert, creative and innovative, all of which contribute to increasing Innovation Performance* in banking companies in Central Jakarta.

H6: Digital Leadership has a positive influence on Innovation Performance which is mediated by Digital Innovation

Testing the sixth hypothesis, it can be concluded that *Digital Leadership* has a positive and significant influence on *Innovation Performance* which is mediated by *Digital Innovation*. This hypothesis is supported by previous research by Benitez et al (2022) and Shah et al (2024). This highlights the influence of *Digital Leadership capabilities* on *Innovation Performance*, mediated by platform digitalization capabilities. Strong *Digital Leadership is proven to encourage an innovative digital culture, improve marketing strategies, and strengthen technology implementation in organizations*. In research by Al-Husban et al (2021) , it shows that *Digital Leadership* has a positive impact on organizational performance and innovation capabilities. These findings also confirm that *Digital Innovation capabilities* act as a mediator in the relationship between *Digital Leadership* and *Innovation Performance*.

H7: Innovative Culture has a positive influence on Innovation Performance which is mediated by Digital Innovation

Testing the seventh hypothesis, it can be concluded that *Innovative Culture* has a positive and significant influence on *Innovation Performance* which is mediated by *Digital Innovation*. This hypothesis is supported by previous researchers Khattak et al (2022). In their research it can be stated that there is a positive and significant influence between *Innovative Culture* on *Innovation Performance* which is mediated by *Digital Innovation*. This shows that *Innovative Culture* encourages PT employees. Bank Central Asia Tbk to engage in creative activities and experiment with new ideas which in turn improve PT's *Innovation Performance*. Bank Central Asia Tbk in Central Jakarta. Ge et al (2023) in their research stated that there is a positive and significant influence between *Innovative Culture* on *Innovation Performance* which is mediated by *Digital Innovation*. This states that *Digital Innovation* is the use of digital technology to create new products, services or processes. *Digital innovation* it could be the adoption of new technology, the development of digital platforms, or the implementation of digital tools to increase efficiency and effectiveness. *Digital Innovation* can be a significant driver in increasing *Innovation Performance*, because digital technology allows faster and broader access to information, better collaboration, and process automation that increases productivity. On the other hand, Gao et al (2023) stated *Digital Innovation* not only accelerates the innovative process, but also opens up new opportunities for innovation that were previously impossible. Digital technologies such as data analytics, artificial intelligence and *the*

Internet of Things (IoT) provide new insights and enable the development of more sophisticated products and services. Thus, *digital innovation* functions as a catalyst that strengthens the impact of *Innovative Culture* on *Innovation Performance*.

CONCLUSION

Based on research results regarding the influence of Digital Leadership and Innovative Culture on Innovation Performance mediated by Digital Innovation among PT employees. Bank Central Asia Tbk in Central Jakarta, the conclusions obtained are as follows: Descriptively, employees are satisfied with Digital Leadership, Innovative Culture, Digital Innovation and Innovation Performance. The results of hypothesis testing show that there is a significant positive influence between Digital Leadership on Digital Innovation, between Innovative Culture on Digital Innovation, and between Digital Innovation on Innovation Performance. However, there is no influence between Digital Leadership on Innovation Performance. The managerial implication of this research is the need to increase Digital Leadership, Innovative Culture, Digital Innovation, and Innovation Performance through various strategies, such as developing interactive intranet platforms, increasing recognition for innovation, adapting digital technology, and implementing green banking practices. However, this research has limitations, such as the number of respondents and focus on certain variables. Suggestions for further research are to add variables and research samples for more reliable and representative results.

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Journal of Social Science

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