

Navigating work's future: Harnessing digital innovation to enhance muslim employees' performance through transformation and flexibility

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ABSTRACT

Fierce competition and uneven quality of service have made higher education institutions face pressure to undergo digital transformation and increase human resource performance. These challenges show that the implementation of digital transformation and organisational flexibility is not fully optimal, especially when digital innovation is not developed as a primary capability. Although many studies specifically examine digital transformation and organisational flexibility, studies specifically examining how digital innovation plays a unique mediator role in strengthening employees' performance are still limited. This research fills the gap that has not been much explored. Using the explanation survey methods, 250 respondents were obtained from several educational institution units. The results indicate that digital transformation has a positive effect and a significant impact on digital innovation. Besides that, organisational flexibility is directly linked to increased employee performance. Most importantly, digital innovation plays a crucial role as a full mediator, distributing the effects of digital transformation and enhancing organisational flexibility, thereby improving the impact on employees' performance. These findings confirm that technological transformation and organizational flexibility are sustainable performance advantages.

Keywords: Digital Transformation; Organizational Flexibility; Digital Innovation; Employee Performance; Organizational Effectiveness

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Introduction

Digital transformation plays a pivotal role in enhancing employees' performance. In a complex, competitive environment, organisations should provide space for employees to grow and develop, including those in higher education. In West Java, there were 154 higher education institutions with more than 135,000 students in 2021. It shows that fierce competition in higher education exists, yet unaccompanied by an increase in quality, which causes sustainable problems and a lack of competitiveness. Digital transformation is defined as the use of technology to reimagine business processes and organizational strategies, shifting from analogue approaches to digital-based systems (Chatterjee et al., 2023; Vial, 2019). This process drives operational efficiency and opens up opportunities for open innovation (Prince et al., 2014; Westergren et al., 2019), including significant changes in strategic management and the way employees seek information, evaluate options, and make decisions (Markus & Loebbecke, 2013; Nwankpa & Roumani, 2016).

Empirical studies show that digital transformation has a positive impact on employee performance (Guzmán-Ortiz et al., 2020; Milukutu & Siachisa, 2023; Saranya & Vasantha, 2023). However, limited organizational resources and capacity often hinder the effective adoption of digital technologies. In addition to digital transformation, organizational flexibility has also been shown to increase productivity and job satisfaction. This flexibility refers to an organization's ability to adapt its structure, processes, and work patterns (Jain et al., 2020), enabling rapid response to changes in the business environment. Research shows that flexible working hours and remote work options improve work-life balance, reduce work-related conflict, and enhance employee performance (Hashmi et al., 2023; Herrera-Ballesteros et al., 2025; Yousaf & Majid, 2018).

However, the direct relationship between digital transformation, organizational flexibility, and employee performance in higher education institutions remains only partially explained. Digital innovation emerges as the pivotal mediator that translates technological change into measurable performance outcomes. Unlike digital transformation, which is structural, digital innovation involves the creative application of digital tools to redesign work processes, generate new value, and deliver efficient service models (Kurilova & Antipov, 2020; Shen et al., 2022). Recent evidence supports this mediating argument: Chatterjee et al. (2023) demonstrate that the positive effect of digital transformation on performance is largely realized through enhanced innovation capability. Antonopoulou et al. (2023) confirm that in higher education, transformation initiatives foster digital innovation

practices that subsequently enhance institutional outcomes. Mukul and Büyüközkan (2023) conceptualise digital innovation as a dynamic capability that enables organizations to convert technological inputs into sustainable outcomes. In contrast, Tsakalerou et al. (2025) highlight innovation capability as a key resource that transforms technology adoption into an organisational advantage. Complementing these findings, Sagbas et al. (2023) empirically demonstrate that innovative behavior mediates the impact of organizational factors on employee performance. Taken together, these studies suggest that without digital innovation serving as a mediating capability, the benefits of digital transformation and organisational flexibility for Muslim employee performance would remain limited and fragmented.

Chatterjee et al. (2023) demonstrate that digital transformation improves organizational performance primarily through the development of innovation capabilities, underscoring the mediating role of this pathway. Antonopoulou et al. (2023) provide evidence from higher education that digital transformation initiatives foster digital innovation practices, which in turn enhance institutional outcomes. Mukul and Büyüközkan (2023) conceptualize digital innovation as encompassing creative behaviours and process redesign within universities, thereby clarifying the construct for higher-education contexts. A systematic review on the innovation capability equation highlights innovation capability as a dynamic resource that converts technological input into sustainable performance (Tsakalerou et al., 2025). Similarly, Sagbas et al. (2023) empirically demonstrate that innovative behaviour mediates the relationship between organizational factors and employee performance, illustrating how innovation mechanisms operate at the individual employee level. These findings suggest that the positive effects of digital transformation and organizational flexibility on performance may be limited without digital innovation as a mediating capability.

Despite the growing evidence that digital transformation and organizational flexibility enhance organizational performance, previous studies have not sufficiently explored how digital innovation serves as a mediating capability within higher education, particularly in Indonesia. Most existing research treats digital innovation as an independent driver of outcomes, leaving the mechanism that links technological adoption and employee performance largely untested. Higher education in West Java faces unique challenges, including limited digital infrastructure, uneven internet access, and cultural resistance to change. Without a clear understanding of how digital innovation converts technological initiatives and organizational flexibility into measurable employee productivity, strategies to enhance competitiveness risk focusing solely on technology adoption while neglecting the internal innovation processes that generate sustainable performance advantages. Previous

literature highlights the benefits of digital innovation on performance (Berawi et al., 2020; Díaz-Chao et al., 2015; Mariani & Nambisan, 2021; Masoud & Basahel, 2023). Digital innovation enables the creation of new business value, production efficiency, and sustainable competitive advantage. However, most studies position digital innovation as an independent variable, rather than as a mediating variable that links digital transformation, organizational flexibility, and employee performance.

Furthermore, employee performance is influenced by both intrinsic factors, such as knowledge, skills, motivation, and commitment, as well as extrinsic factors, including leadership, systems, teams, and work situations (Pawirosumarto et al., 2017; Rosmi, 2020). This perspective enriches the analysis of the relationship between digital innovation and performance, as technology adoption will be effective only if it is balanced with individual and organisational readiness. Based on the Technology Organisation Environment (TOE) and Resource-Based View (RBV) frameworks, digital innovation can serve as a strategic resource, transforming technological inputs and organisational flexibility into performance advantages (Chatterjee et al., 2023; Sagbas et al., 2023; Wati et al., 2025). Without understanding this mediating role, a higher education institution's competitiveness enhancement strategy risks being ineffective because it only emphasizes technology adoption without ensuring internal innovation processes that drive employee productivity.

Based on the description, this study aims to examine the role of digital innovation as a mediating variable in the relationship between digital transformation and organisational flexibility, and their impact on employee performance in higher education in West Java. The results are expected to provide theoretical contributions to the development of literature on digitalization and organizational performance based on TOE and RBV, while also offering practical implications for formulating policies to strengthen higher education competitiveness in the digital era.

Literature Review

A worker's performance can be defined as the observable and measurable manifestation of their abilities and competencies on the job (Shaheen et al., 2013; Zhang et al., 2016). Study note: Employee performance constitutes the aggregate value anticipated by an organisation, derived from a sequence of behaviours exhibited by individuals over a specified duration (Gazi et al., 2024). Work performance encompasses task performance, contextual performance, and adaptable performance (Gazi et al., 2024). Furthermore, employee

performance is a record of work results or certain activities achieved during a certain period of time (López-Cabarcos et al., 2022). The output indicates how effectively an employee performed their job, based on their skills, the effort they invested, and the job options available to them.

Digital Transformation on Employee Performance

Digital transformation is defined by Zhai et al. (2022) as the process through which organisations and services utilise new digital technology to improve their operational efficiency. Guzmán-Ortiz et al. (2020) elucidate that digital transformation entails employing technology to enhance consumer engagement, optimise processes, and utilise personnel for superior outcomes. Additionally, Vial (2019) states that digital transformation is the process of improving something by making significant changes to its features through the integration of computer, communication, and networking technologies. Lee (2022) also notes that digital transformation occurs when digital technology is integrated into every aspect of a business, altering its operations and enhancing its value for users. The broad term "digital transformation" refers to an organisation's ability to utilise digital technology to enhance the efficiency and effectiveness of its internal processes, products, and services (Vial, 2019; Arifin et al., 2025).

Employees must exhibit productive performance, supported by performance aids, including digital resources. Digital transformation inside a corporation facilitates staff productivity. This digital transformation enhances staff performance. According to Shwedeh (2023), an organisation's digital transformation can significantly influence employee performance, affecting various aspects of work and productivity. Therefore, this study examines five key variables that may impact employee performance as a result of the digital transformation of organisations in the UAE. In line with this, digital transformation has an impact on employee performance in the telecommunications industry in Bangladesh (Islam & Hossain, 2024). The findings indicate that digital transformation improves performance management systems, workforce performance, and sustainability. Based on the description, the hypothesis can be assumed.

H₁: Digital transformation affects employee performance.

Organizational Flexibility on Employee Performance

Organizational flexibility refers to a company's ability to hire individuals who are committed to meeting customer needs at all levels of operation, while creating processes that

are both easily implementable and sufficiently adaptable to thrive and compete effectively in a rapidly evolving environment (Ni et al., 2021). Another description is the ability of an organization to efficiently and quickly adapt its structures, systems, and processes to changing environmental conditions (Jain et al., 2020). Organizational flexibility refers to the degree to which an organisation can respond to internal and external influences. Organizational flexibility enables organisations to implement empowerment, encourage decision-making involvement, foster renewal processes, innovation, and employee commitment.

Organizational flexibility and employee performance have a complex relationship. Work flexibility, encompassing the determination of working hours, locations, and methodologies, can positively influence employee performance. Employees who have work flexibility can be more comfortable, motivated, and productive, which ultimately improves their performance (Yousaf & Majid, 2018). Additionally, several studies confirm that flexible working arrangements, as part of organisational flexibility, are proven to enhance employee retention by improving performance, satisfaction, loyalty, and productivity (Çivilidağ & Durmaz, 2024). With adequate flexibility, employee can maintain their time and method as needed, feeling valued and trusted by the organization. These conditions create perceived organizational support that enhances loyalty, productivity, and quality performance (Desa & Asaari, 2025). Based on the description, the hypothesis can be assumed.

H₂: Organizational flexibility affects employee performance.

Digital Innovation on Employee Performance

Generally, digital innovation centers on the implementation of new technologies aimed at enhancing employee productivity (Hao et al., 2023). Digital innovation is the process of optimizing operations, enhancing the customer experience, and creating new ways to do business through the application of modern digital technology to solve business concerns and problems (Shen et al., 2022). Furthermore, digital innovation involves applying new ideas to digital technology to create marketable goods, processes, or business models (Mariani & Nambisan, 2021). Convergence, generativity, and modularity (indicative of decentralized innovation structures) are the three main features of digital innovation (Hu & Xu, 2023). Innovation could lead to the integration of digital technology into various products or services. Another effect is that innovation can foster synergy across diverse organizational activities, promoting uniqueness and enhancing competitiveness. Innovation and employee

performance have a close and mutually beneficial relationship (Mariani & Nambisan, 2021; Masoud & Basahel, 2023). Innovation can enhance employee performance by encouraging new thinking, creative solutions, and improved work processes, which in turn increase efficiency and productivity (Berawi et al., 2020; Kurilova & Antipov, 2020). Based on the description, the hypothesis can be assumed.

H₃: Digital transformation has an impact on employee performance.

Digital Transformation on Digital Innovation

Digital transformation also influences digital innovation. Digital transformation and digital innovation are interconnected ideas; however, they exhibit distinct characteristics. Digital transformation is a process of profound alteration in corporate operations, entailing the extensive implementation of digital technologies. Innovative digital products, services, or business methods are distinct from this. As part of its digital transformation, the company is pushing its employees to embrace new technological tools that facilitate information exchange. As defined earlier by Chen (2018) and Nambisan et al. (2017), digital innovation refers to the application of novel ideas in creating digitally based products, services, or business models. In this context, the present discussion focuses on how digital innovation, previously conceptualized, functions as a mediating mechanism linking digital transformation initiatives to enhanced employee performance. There are three main traits of digital innovation: convergence, generativity, and modularity (indicative of decentralized innovation structures) (Hu & Xu, 2023). As businesses go digital, they may be more likely to accept new ideas that focus on sharing and learning information to solve problems or finish tasks. The primary function of digital transformation is to empower employees by enhancing their skills and facilitating the effective use of digital technologies in their work (Katyendo & de Souza, 2022). Based on the description, the hypothesis can be assumed.

H₄: Digital transformation has an impact on digital innovation.

Organizational Flexibility on Digital Innovation

Organisational flexibility also has a relationship with digital innovation, where both organisational flexibility and digital innovation support each other in responding to rapidly changing business dynamics. While digital innovation provides new tools and techniques to boost efficiency and create value, organisational flexibility enables businesses to respond to market changes and technological advancements (Awais et al., 2023). This aligns with the study, which states that innovative IT solutions are born out of organisations that are both

flexible and supportive (Husain et al., 2024). Other studies confirm that digital transformation has an impact on innovation (Chen & Kim, 2023). This study emphasizes that the digital transformation of companies is measured using textual analysis methods, and it has been found that digital transformation can drive corporate innovation. Digital transformation in developing countries, such as China, provides valuable experience and evidence for promoting Industry 4.0 and sustainable innovation. Thus, organizational flexibility plays a key role in strengthening the success of digital innovation initiatives in the long term. Based on the description, the hypothesis can be assumed.

H₅: Organizational flexibility has an impact on digital innovation.

Digital Innovation as a Mediator of Digital Transformation on Employee Performance

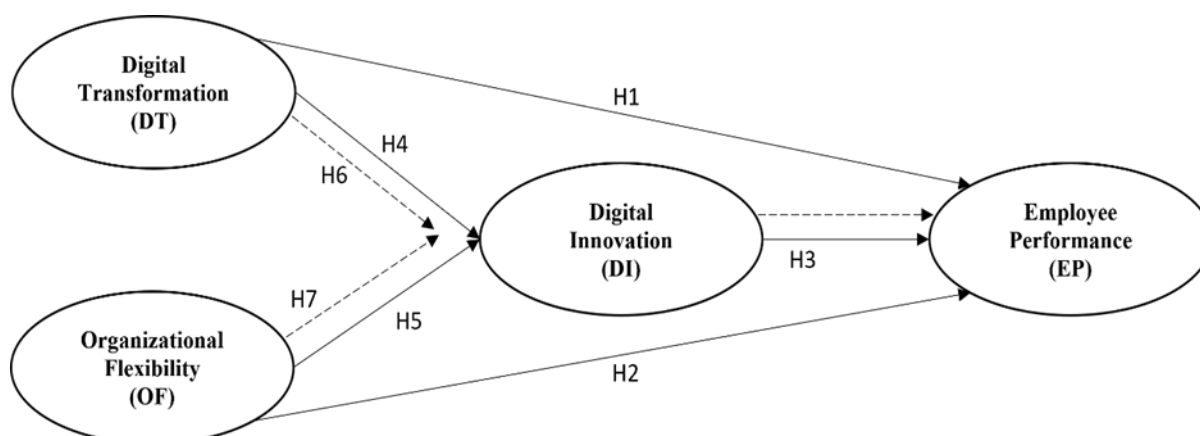
According to the empirical review, digital transformation affects employee performance mediated by digital innovation. Digital transformation not only adopts new technology but also strategic processes that redesign business processes with integrated technology, such as IoT and big data, to enhance daily operational organisation (Xu et al., 2025). Digital transformation is evidence of increased employee meaning and competence, which in turn contributes to their performance (Yildiz et al., 2024). Another study emphasised that strengthening innovation technology with a decrease in internal acyclic information can improve R&D intensity, ultimately enhancing organisational innovation efficiency and competitiveness (Xu et al., 2025). Furthermore, a collaborative atmosphere has been proven to strengthen innovative performance by integrating collective resources and facilitating rapid information sharing. It can make a conducive environment for collaboration and innovation (Zeng & Bao, 2025). Therefore, the relationship between digital transformation and employee performance can be mediated by digital innovation, particularly in terms of psychological empowerment, cross-functional collaboration units, and technological adaptability, serving as a proactive force within the organisation. Based on the description, the hypothesis can be assumed.

H₆: Digital innovation mediates the effect of digital transformation on employee performance.

Digital Innovation as a Mediator of Organizational Flexibility on Employee Performance

Organizational flexibility reflects the ability of an organisation to rapidly and efficiently adapt its structure, systems, and processes to environmental changes (Jain et al., 2020), which

Figure 1. Research Framework



has an impact on employee performance. This flexibility not only allows the implementation of empowerment and involvement in decision-making but also drives the blending process, innovation, and employee commitment (Ni et al., 2021). In that context, digital innovation plays a vital role as a mediator. Digital innovation refers to the implementation of modern technology processes to address business problems and create new value (Mariani & Nambisan, 2021; Shen et al., 2022).

Strengthen the positive effect of organizational flexibility that provides tools and a new approach to strengthen efficient and new experiences for employees (Hao et al., 2023). A flexible organisation tends to be more capable of creating an innovative environment that supports collaborative and rapid responses to market and technological dynamics (Awais et al., 2023; Husain et al., 2024). Thus, organizational flexibility not only direct effect on increasing employee performance by increasing comfort, motivation, and productivity (Yousaf & Majid, 2018), but also an indirect effect by digital innovation, which drives technology into the work process, creating synergy between organizational activities, increasing efficiency, and employee competitiveness, sustainability (Berawi et al., 2020; Masoud & Basahel, 2023). Based on the description, the hypothesis can be assumed.

H7: Digital innovation mediates the effect of organizational flexibility on employee performance.

Methods

This current study employed descriptive and explanatory surveys to investigate the relationship between variables by testing hypotheses in the field. This study focused on and involved employees of higher education colleges in West Java. During the course of this research, a total of 498 employees were identified, from whom a sample of 250 employees

was selected. The sample range for SEM-PLS analysis should be at least ten times the number of indicators in the model (Guenther et al., 2023). The sample for this study, comprising 250 respondents, was selected based on this view, or a range of 100 to 250, to ensure reliable results. Take the time to complete the following list of statements before proceeding with the questionnaire. This means that before filling out the main questionnaire, there is another list of statements that must be completed first. This list of statements typically serves as an introduction. Following data collection, the PLS-SEM method's maximum probability approach was used for analysis (Sarstedt et al., 2020). This approach enables researchers to identify causal relationships between latent variables constructed based on empirical data (Hwang et al., 2021). Additionally, a questionnaire, serving as the research instrument, was used to collect data in the form of structured sections. The assessment scale for the answers of respondents who were successfully collected was carried out using a five-point Multiple Rating List Scale model (Cooper & Schindler, 2014), which described the alternative answers of respondents and assigned a score range of 1-5. The instrument was initially evaluated through validity and reliability testing as explained in the research instrument section. The data that had been collected were then coded and analysed, as described in the data Analysis section.

Testing validity was conducted to determine whether the tool's measurement can operate its function with good measuring validity in smart PLS. This can be seen from the loading factor values for every dimension and variable, as indicated by the convergent validity results, where dimensions and variables are considered valid if their own mark correlation is greater than 0.7. Although this study stage, beginning with the development scale measurement and loading values of 0.5 to 0.6, can still be accepted (Chin & Gopal, 1995). To ensure data quality, the following steps were taken: gathering data requirements, establishing validation criteria, collecting and verifying data, handling errors, documenting processes, and conducting ongoing monitoring.

Table 1, factor loading of digital transformation shows a very strong relationship with the measured dimensions. Digital Mindset, with a factor loading value of 0.958, indicates that the organization's reliance on technology in decision-making is high. The Practice dimension has a factor loading value of 0.932, indicating that overall organization activities are currently conducted digitally. Meanwhile, Data Access Integrity highlights the importance of flexible access to computing power and storage, as evidenced by its factor loading value of 0.950.

Table 1. Factor Loadings (FL)

Dimensions	Item	FL
Digital Transformation – DT (Cronbach’s Alpha = 0.965; Composite Reliability = 0.971)		
Digital Mindset	Our organization utilize digital technology to process data into information for decision-making.	0.958
Practice	All organization activities are carried out digitally.	0.932
Data Access Integrity	My agency has access to flexible computing power and storage.	0.950
Organizational Flexibility – OF (Cronbach’s Alpha = 0.926; Composite Reliability = 0.947)		
Structural Flexibility	Our organization are making changes for the better.	0.895
Resource Flexibility	Our organization convert resources into other beneficial uses.	0.927
Leadership Flexibility	I am able to meet the demands of speed and diversity of activities in various contexts.	0.622
Cultural Flexibility	I can adapt to environmental changes and uncertainty effectively.	0.921
Technological Flexibility	Our organization make adjustments and changes to technology.	0.881
Digital Innovation – DI (Cronbach’s Alpha = 0.908; Composite Reliability = 0.931)		
Product Innovation	I do innovation in the organizational realm.	0.912
Process Innovation	The intensity of expanding virtual-based communities and networks is very frequent.	0.950
Organizational Innovation	I manage work differently from existing methods.	0.865
Communication Innovation	I am implementing new methods to promote the organization.	0.888
Employee Performance – EP (Cronbach’s Alpha = 0.942; Composite Reliability = 0.963)		
Quality Output	I can complete the work tasks given according to work quality standards.	0.939
Quantity Output	I can complete work in an amount that meets the work standards set by the organization.	0.955
Timeliness	Employees are always punctual in completing work.	0.885
Cost Effectiveness	Employees can use their work equipment efficiently.	0.868
Need for Supervision	Employees have high work discipline even without close supervision.	0.945
Interpersonal Impact	Relationships between employees are established harmoniously, thus encouraging the achievement of work results.	0.937

Table 2. Discriminant Validity (HTMT)

	DT	EP	DI	OF
Digital Transformation (DT)				
Employee Performance (EP)	0.863			
Digital Innovation (DI)	0.811	0.780		
Organizational Flexibility (OF)	0.758	0.830	0.868	

Table 1 also shows that Structural Flexibility, with a factor loading of 0.895, indicates the organization's ability to make changes to improve its operations. Resource Flexibility, with a value of 0.927, demonstrates the organization's capacity to effectively convert resources to alternative uses in order to generate greater benefits. Although the factor loading for Leader Flexibility (0.622) is lower than the others, it still indicates the ability to meet the demands of speed and diversity across various contexts. Cultural Flexibility, with a factor loading of 0.921, reflects adaptability in uncertain environments, while Technological Flexibility (0.881) shows that the organization is capable of adjusting and responding to technological advancements. Overall, all flexibility dimensions in Table 1 contribute strongly to the measured innovation dimensions. Product Innovation, with a factor loading of 0.912, indicates individual responsibility for innovation within the organization. Process Innovation shows the highest loading (0.950), reflecting a strong emphasis on expanding community engagement and virtual networking. Organizational Innovation, with a factor loading of 0.865, demonstrates the adoption of new job management methods compared to existing practices, while Communication Innovation (0.888) indicates the implementation of new approaches to promote the organization. Furthermore, Table 1 also presents the factor loadings for Employee Performance dimensions. Quality Output (0.939) implies that employees consistently meet specified quality standards with high accuracy and reliability, while Quantity Output (0.955) indicates productivity levels aligned with organizational standards. Timeliness, with a factor loading of 0.885, reflects high punctuality in task completion, and Cost Effectiveness (0.868) suggests efficient use of work equipment and resources. Need for Supervision shows a strong loading (0.945), indicating high levels of work discipline even in the absence of strict supervision, while Interpersonal Impact (0.937) reflects harmonious relationships among employees and their positive contributions to achieving organizational outcomes. The reliability assessment of the outer model shows that all constructs exhibit high Cronbach's Alpha and Composite Reliability values, indicating strong internal consistency and reliability. Employee Performance demonstrates a Cronbach's Alpha of 0.942 and Composite Reliability of 0.963, Digital Transformation shows values of 0.965 and 0.971, Organizational Flexibility records 0.926 and 0.947, and Digital Innovation achieves 0.908 and 0.931, respectively. These results confirm that all constructs are reliable and suitable for further analysis.

In addition, Table 2 indicates that the implementation of digital transformation and organizational flexibility can enhance employee performance, with digital innovation

emerging as a stronger factor in this relationship. The HTMT values between Digital Transformation and Employee Performance (0.863), Digital Transformation and Digital Innovation (0.811), and Digital Transformation and Organizational Flexibility (0.758) indicate acceptable relationships that meet discriminant validity requirements. The relationships between Employee Performance and Digital Innovation (0.780) and Employee Performance and Organizational Flexibility (0.830) also remain within acceptable thresholds. Although the relationship between Digital Innovation and Organizational Flexibility reached 0.868, slightly exceeding the recommended threshold of 0.85, it is still considered tolerable.

Result and Discussion

Based on Table 3, the majority of respondents were male (67%), 167 respondents, while 83 were female (33%). In terms of age, the largest group was in the 41–45 year range, with 101 respondents (40.4%), followed by those in the 36–40 year old range (17.6%), indicating a predominance of the middle-aged workforce. In terms of education, the majority held a master's degree (S2), with 228 (91.2%), while 15 (6%) had a doctorate, and 7 (2.8%), indicating a high level of academic qualification. The length of service was dominated by respondents with 6–10 years of experience, at 136 (54.4%). This profile reveals that PTAIS in West Java has access to mature, highly educated, and experienced human resources who possess the potential to support the digital transformation and innovation process.

Table 4 presents the outcomes of hypothesis testing, which can be summarised as follows. The first hypothesis addresses whether employee performance is affected by digital transformation. Conventions of this study show that digital transformation improves employee performance ($p\text{-value} = 0.000$), ($t\text{-statistic} = 5.737$) is higher than 1.96, and has a coefficient of 0.278. Research results indicate that utilising digital technologies may enhance productivity. Facilitate access to information and strengthen collaboration. However, digital transformation can also trigger challenges such as increased work stress and the need to improve employee competency. This indicates that digital transformation has a favourable and substantial effect on productivity in the workplace. The findings of this analysis are corroborated by prior studies, which indicate that digital transformation has a positive and significant influence on employee performance, as evidenced by research conducted by Guzmán-Ortiz et al. (2020) and Saranya and Vasantha (2023).

Digital transformation not only impacts the overall business process but also directly affects employee performance in various ways, such as increasing productivity, collaboration,

Table 3. Demographic Profiles

Profiles		Frequency	Rate (%)
Gender	Male	167	67
	Female	83	33
Age	25 – 30 years old	15	6
	31 – 35 years	36	14.4
	36 – 40 years old	44	17.6
	41 – 45 years old	101	40.4
	46 – 50 years old	32	12.8
	Over 51 years old	22	8.8
Education	Bachelor	7	2.8
	Master	228	91.2
	Doctoral	15	6
Years of service	< 1 year old	25	10
	1 – 5 years old	43	17.2
	6 – 10 years old	136	54.4
	11 – 15 years old	38	15.2
	Over 15 years old	8	3.2

Table 4. Hypothesis Testing Results (Direct Effects)

Hypothesis	Original Sample	Std. Deviation	t-statistics	p-value	Decision
H ₁ : DT -> EP	0.278	0.048	5.737	0.000	Accepted
H ₂ : OF -> EP	0.258	0.043	5.943	0.000	Accepted
H ₃ : DI -> EP	0.474	0.033	14.470	0.000	Accepted
H ₄ : DT -> DI	0.528	0.094	5.620	0.000	Accepted
H ₅ : OF -> DI	0.356	0.088	4.059	0.000	Accepted

efficiency, competence, innovation, motivation, and enabling better decision-making (Gaglio et al., 2022). The study reveals that digital transformation has a profound impact on three key areas of a business: customer experience, operational processes, and business models (Kraus et al., 2022; Verhoef et al., 2021). Digital transformation refers to the use of digital technologies to streamline a company's processes, aiming to enhance efficiency, foster innovation, and improve the customer experience. The integration of digital technology significantly influences company processes and has a direct impact on employee performance. Digital technology can increase worker productivity by automating mundane tasks, facilitating information access, and enhancing collaboration among team members. When employees have access to the right technology, they can perform their jobs more efficiently and accurately, which in turn improves the company's overall performance. Digital

transformation occurs when a company utilises digital technology to enhance both its internal processes and the products it sells to external customers, making them more efficient and effective (Vial, 2019).

Second hypothesis examines how organizational flexibility affects employee performance. The results indicate that employee performance is positively influenced by organisational flexibility, as evidenced by a p-value of 0.000, a t-statistic of 5.943, and a coefficient value of 0.258. The t-statistic is statistically significant when the p-value is less than 0.05, as it exceeds 1.96. It means that when a company is flexible with its policies and allows workers some leeway in how and where they complete their tasks, it boosts productivity. This flexibility can increase employee motivation, productivity, job satisfaction, and retention. By implementing organisational flexibility, organisations can create a more effective work environment for employees, which in turn will enhance their performance and productivity. Flexibility has a substantial impact on performance, as indicated by numerous empirical studies (For instance, Sabuhari et al., 2020), meaning that freedom in working makes employees feel more interested in their work because it can be done at any time and from anywhere. Furthermore, multiple research findings indicate that organisational flexibility influences employee performance, as evidenced by Yousaf and Majid (2018). This demonstrates that employee performance is positively influenced by organizational flexibility.

The third hypothesis examines the impact of digital innovation on employee performance. The results show that the p-value (0.000) is significant, the coefficient value of 0.474 is greater than 1.96, and the t-statistic is 14.470. Therefore, introducing new digital tools and methods into the workplace can boost worker efficiency and motivation, which in turn leads to better overall performance. The implementation of digital technology not only increases employee productivity but also contributes to achieving sustainable goals (Hao et al., 2023). The implementation of a management system on a technological basis enables time savings, operational efficiency, and the optimisation of human resources, ultimately enhancing employee performance. This is because digital innovation introduces a new way to resolve the problem through modern technology applications (Mariani & Nambisan, 2021; Shen et al., 2022). It can create new opportunities for employee to think more creatively to face the challenges in their job. The advanced digital tools enable employees to explore innovative solutions, which in turn increase their performance effectively and efficiently. Besides that, digital innovation supports employees in adapting to changes in the job environment. Another chance, digital innovation enables access to various online resources,

boosts learning processes, and helps employees adapt to growing job demands (Opland et al., 2022).

Additionally, digital innovation contributes to increasing job satisfaction and employee involvement by creating business models and new products that interest employees (Mariani & Nambisan, 2021). It can motivate employees to innovate and increase their ownership of their work, as well as their involvement in achieving the organization's goals. Furthermore, organizations that adopt digital technology will increase employee performance through automation and increase interaction between employees and technology (Kurilova & Antipov, 2020).

The fourth result is that digital transformation has a positive and significant effect on digital innovation, with a p-value of 0.000, a t-statistic of 5.620 (higher than 1.96), and a coefficient of 0.528. This demonstrates that the effective and strategic implementation of digital technology can enhance various aspects of the business, including the creation of new products and services, improved operational efficiency, and a better customer experience. The research findings reveal that digital transformation has a significant and favourable impact on digital innovation. Digital transformation establishes a foundation and fosters diverse ideas by utilising digital technologies to alter corporate operations and enhance value delivery to customers. This result supports the previous study, which found that digital transformation primarily enhances the flexibility of digital innovation and company open innovation performance (Qiu & Chang, 2025). Another results indicate that digital transformation has markedly enhanced firm performance and can stimulate the momentum of company innovation (Peng et al., 2022).

Reducing costs, increasing revenue, enhancing efficiency, and driving innovation are the primary paths of digital transformation that enable company development, among which the impact of corporate innovation policy is the most significant. Digital transformation also leads to innovation that extends outside the borders of a company and into existing external innovation networks (Prince et al., 2014; Westergren et al., 2019). Any change or improvement that is tech-driven and based is considered a digital transformation (Nwankpa & Roumani, 2016). Both the introduction of new technology and a change in the way an organization thinks about itself are part of digital transformation and behaviour to promote innovation. By strategically leveraging digital technologies, companies can create new value, meet customer needs, and stay competitive in an ever-evolving marketplace.

Table 5. Hypothesis Testing Results (Indirect Effects)

Hypothesis	t-value	p-value	Decision
H ₆ : DT -> DI -> EP	5.204	0.000	Accepted
H ₇ : OF-> DI -> EP	3.731	0.000	Accepted

The fifth hypothesis examines the impact of organisational flexibility on digital innovation. The result is indicated by a p-value of 0.000, a t-value of 4.059, which exceeds 1.96, and a coefficient value of 0.356. This demonstrates that an organisation can adapt quickly to changes, new technologies, and the business environment, making it easier to adopt and implement digital innovations. Robust organisational flexibility enables organisations to swiftly adjust to alterations in digital technology and the business landscape, hence fostering more effective and efficient innovation. With a more fluid and adaptable structure, organizations can easily integrate new technologies, simplify processes, and develop innovative products and services. Organizational flexibility represents a substantial transformation in operational methodologies for certain firms. Organisational flexibility necessitates transcending comfort zones to explore innovative solutions, fostering a culture that perceives mistakes not as failures, but as opportunities for continuous improvement (Sherehiy & Karwowski, 2014). One of the foundations of innovation is to embrace the world, perceiving it as an opportunity to achieve superior outcomes than previously attained. As innovation escalates, expertise emerges as a pivotal instrument for demonstrating organisational flexibility, as it compels leaders and their associates to scrutinise their work dynamics, processes, communications, technological resource utilisation, and customer relationships, while also addressing trends within their respective domains (Wu & Tham, 2023). This result also indicates that organisational flexibility and support foster innovation in solutions (Husain et al., 2024).

Lastly, Table 5 shows that the indirect effect of digital transformation on employees through digital innovation is accepted. This relationship is proven by p-value (0.000) and t-value (5.204). Indicating this relationship as positive and significant. The findings demonstrated that digital innovation acts as a mediator between digital transformation and employee performance. A previous study noted that innovation serves as a moderator of the impact of digital transformation on workplace productivity (Xu et al., 2025; Yildiz et al., 2024; Zeng & Bao, 2025). This suggests that the use of digital technology within an organisation can enhance employee performance. Several factors contribute to digital

innovation, including the uniqueness of digital product platforms compared to their rivals, the usefulness of digital solutions, their features, and the quality of those solutions themselves (Khin & Ho, 2019). Employee performance will increase when the organisation develops digital innovation, making it a key factor in improving employee performance. Besides improving operational efficiency by focusing on the implementation of new digital technologies, digital technology also functions to optimise operations, enhance customer experience, and create new business models (Mariani & Nambisan, 2021; Shen et al., 2022). With three main characteristics: convergence, generativity, and modularity (indicative of decentralized innovation structures), digital innovation can increase employee performance by driving creative thinking, innovative solutions, and better process working, which will increase efficiency and productivity (Hu & Xu, 2023; Masoud & Basahel, 2023). It indicates that with digital innovation supported by the organization, employees can quickly adapt to technological environmental changes and increase their productivity (Awais et al., 2023).

Regarding the relationship between organizational flexibility and employee performance through digital innovation, the p-value is 0.000 and the t-value is 3.731. This result indicates a positive and significant relationship. These results suggest that changes and the adoption of digital technology can impact employee abilities and work outcomes. The findings of this study indicate that flexibility influences performance through the mediation of innovation. Organizational flexibility enables an organisation to quickly adapt to changes in internal or external environments (Awais et al., 2023; Berawi et al., 2020; Husain et al., 2024; Masoud & Basahel, 2023). This flexibility can increase employee comfort, which in turn enhances productivity and performance. With effective working hour management and flexible locations, employees feel more comfortable and motivated (Yousaf & Majid, 2018). This is because digital innovation requires a flexible organisation to respond to quick changes, and organisational flexibility is better able to adopt new technologies that can improve operational efficiency. The study confirms that digital transformation driven by digital innovation can lead to operational efficiency and produce more effective new products and services (Chen & Kim, 2023).

Digital innovation in organizations can enhance accessibility and flexibility in learning, improve the quality of teaching and research, and increase management efficiency. This can include developing interactive online learning platforms, integrating AI technology into the curriculum, and utilising data to personalise learning and inform decision-making. Institutions can create or expand online platforms that offer lecture materials, assignments,

discussion forums, and other resources. These platforms should be accessible on various devices and easy to use. AI can personalize learning, provide instant feedback, and help lecturers track student progress.

Conclusion and Suggestion

The findings of this study provide strong empirical evidence that digital transformation has a positive and significant effect on employee performance, primarily through its ability to generate digital innovation that improves work efficiency and productivity. The integration of digital technologies into organizational processes enables employees to perform tasks more effectively and supports continuous improvements in service delivery. In addition, the results indicate that organizational flexibility significantly enhances employee performance, particularly through flexible work arrangements related to time, location, and work methods, which allow organizations to respond more effectively to environmental uncertainty and technological change. Moreover, this study confirms that digital innovation plays a critical mediating role in the relationship between digital transformation and organizational flexibility, thereby amplifying their combined influence on employee performance. Organizations that align digital transformation initiatives with flexible organizational structures are more capable of converting technological investments into sustainable performance outcomes. These findings contribute to the literature by identifying digital innovation as a central mechanism through which technological capabilities and organizational adaptability interact to improve human resource performance.

From a managerial perspective, digital transformation should be treated as a strategic priority, particularly within higher education institutions, as it enhances employee performance through the effective application of technology. Digital innovation should not be regarded solely as a technical responsibility assigned to system developers; rather, it requires active engagement from organizational leaders and the broader academic community to ensure effective implementation and value creation for students and other stakeholders. In parallel, organizations must continuously develop and maintain organizational flexibility to ensure that digital initiatives remain responsive to dynamic business environments.

Finally, future research is encouraged to extend this model to organizations across different sectors and regions beyond the education context. The inclusion of additional moderating variables, such as digital leadership, organizational culture, or strategic orientation, would further strengthen and refine the employee performance development framework in the digital era.

Disclosure The Use of AI Technologies

During the preparation of this work, the author(s) used Grammarly-AI to translate, paraphrase, and correct the grammar. After using these tools/services, the author(s) reviewed and edited the content as needed and take full responsibility for the final content of the publication.

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