Digital Transformation Improves Employee Performance Through Innovation and Organizational Learning

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Abstract: The digital transformation of human resources enhances employee productivity, improves the efficiency of organizational and operational costs, and optimizes strategic decision-making. This research aimed to improve employee performance from digital transformation, organizational learning, and innovation variables. Employee performance is the dependent variable, and digital transformation is the independent variable—organizational learning and innovation variables are intervening variables to mediate the relationship between digital transformation and employee performance. The sample for this research was 163 civil servants from the Central Java Provincial Health Service. Data testing use the partial least square test with the SmartPLS version 3. The test results showed that digital transformation strongly influences employee performance through innovation. However, organizational learning can also mediate the role of digital transformation on employee performance at the Central Java Provincial Health Office, although not as strong as its influence through innovation.

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A. INTRODUCTION

Aspects of life have experienced significant changes due to the Industrial Revolution 4.0. Integrating digital and physical technology will make activities and programs more efficient, flexible, and connected, thus changing the industrial paradigm. In addition, collaboration between companies, governments, and communities is needed. Companies should not only prioritize or maximize profits but also need to develop technologies that are beneficial to all parties. The Government's role is also needed, namely in creating regulations regarding the adoption of existing technology so that it can be ensured that the technology is socially and environmentally beneficial. This condition also has an impact on the emergence of digitalization.

Digitalization of Human Resource Management uses information technology to manage information and data related to human resources in a company or organization. It can increase efficiency and productivity in managing personal data, work information, attendance, payroll, and performanceevaluation. Not only that, this condition can also reduce operational costs, increase employee satisfaction, and optimize strategic decision-making. Human resource management can be digitized by using apps and software, storing data in the cloud, using AI technology and data analytics, and employee training, which helps provide employees with knowledge and insights to maximize the benefits of its implementation. Organizations have even revolutionized their respective organizational systems.

The aim is for the performance of Government agencies and institutions to align with

rapid technological advances, including public service agencies and institutions such as the Health Service. The health service is an element that organizes regional autonomy in the health sector. Performance assessment at the Health Service uses various methods to improve employee performance, including organizational learning and innovation. Innovation indirectly improves organizational performance due to new ideas emerging from employees to improve organizational competence. Innovation will improve administrative processes, increase efficiency, and make management work more effectively (Sadikoglu, 2010). The occurrence of COVID-19 prompted the Central Java Provincial Health Service to make many efforts to advance services and activities with digital programs, such as the launch of *SATU SEHAT* and telemedicine. *SATU SEHAT* is an effort to accelerate the digital transformation of Indonesia's health. SATUSEHAT is a platform for integrating individual health data between health facilities for standardization and data interoperability towards implementing electronic medical records (EMR). The *SATU SEHAT* platform connects the system and the entire ecosystem of players in the health industry, such as hospitals, health centers, start-ups, pharmacies, health services (DINKES), health industries, laboratories, and others by providing standardized specifications and mechanisms for business processes, data, technical, and security. Health data exchange is expected to be more efficient and effective with this platform. It is expected to improve more optimal health services to encourage the Government to make health policies and health workers (naked) to make clinical decisions based on data obtained in near real-time. Meanwhile, telemedicine aims to improve the quality of public health in one health service facility with another in the form of consultations to establish a diagnosis, therapy, and disease prevention.

Several previous studies on the relationship between digital transformation and employee performance showed that digital transformation contributes to the performance of insurance company workers in Peru (Guzman-Ortiz et al., 2020). Other research found that digital transformation directly and indirectly influences employee performance through innovation (Kurniawan et al., 2021). This research aimed to look at factors affecting the performance of employees at the Public Health Service of Central Java Province.

Employee performance is the result of work that is realized at a time. Employee performance is the achievement of a group or individual in an organization in completing their responsibilities and duties to achieve the organization's goals legally, not violating the law, and being ethical and moral (Fachrezi & Khair, 2020; Setyasih, 2022). Based on the State Administration Institute of the Republic of Indonesia, employee performance is an achievement at the level of a program, job, or policy appropriate to realize the company's vision, mission, goals, and objectives (Fachrezi & Khair, 2020). Based on Law Number 5 of 2014, it is explained that performance is the extent to which an individual has played his role in carrying out the company's strategy, either to realize specific goals related to the individual's role or to demonstrate abilities that are stated to be suitable for the organization.

Digital Transformation is defined as a sociocultural process for adapting a company to a new organizational form and according to the skills needed to survive and remain relevant in the digital landscape (Ritonga et al., 2023). In addition, digital transformation can also boost innovation that does not include organizational capabilities towards external innovation networks (Prince et al., 2014; Westergren et al., 2019). Digital transformation is seen from the changes and transformations created by technology (Nwankpa & Roumani, 2016). Digital transformation is change-driven and built on the foundation of digital technology to bring unique changes to business operations, value creation, and business

processes (Verhoef et al., 2019).

Digital transformation certainly has an impact on learning organizations. Learning organizations themselves talk about encouraging the quality of human resources in a company. Digital transformation will encourage and advance the quality of human resources so that digital transformation has a positive and significant impact on learning organizations (Putri, 2020; Su et al., 2021). Digital transformation also influences innovation because it is the fruit of innovation in technology. Digital transformation can optimize innovation because it forms particular expertise in the digital field, a form of successful innovation implemented by the company (Whitworth et al., 2024). Digital transformation influences employee performance because digital transformation can add value to the organization's human resources. Previous research showed that digital transformation positively impacts employeeperformance, increasing labor productivity and internal services (Guzma´n-Ortiz et al., 2020).

Organizational learning is an organization that creates a supportive atmosphere and provides the broadest possible opportunities for people to learn in groups and individuals who then apply the learning results to organizational activities and processes (Nurhayani & Sulistio, 2018). Organizational learningand knowledge development can occur in an organization with a learning culture and collaborative working conditions. Achieving high performance requires that organizational procedures prioritize collective, reflective, and sustainable learning (Hidayati, 2022). Therefore, learning organizations influence employee performance. The better the organizational learning process, the better the employee performance in the company (Larassaty, 2024)(Hassani et al., 2022).

Innovation is developing new techniques and methods to produce goods and services. Innovation is also defined as transforming creative ideas into marketable products (Indrajita et al., 2021). Innovation can emerge in an organization in two ways: innovation can be generated, and innovation can be adopted. When generated, an innovation is initiated and developed from within the organization. When adopted, the innovation is generated elsewhere and then adopted by the organization [23]. Organizational innovation can be achieved by reducing transaction and administration costs and increasing companyperformance [15]. Previous research showed a positive relationship between innovation and employee performance (Osman et al., 2016) (Maheshwari et al., 2023). Studies on this topic still need to be widely available for objects in the public sector (PNS), especially in local Government. This study explored the importance of digitalization in health service policies that impact the sub-district and village levels. Digital-based health services, such as (SATU SEHAT), will be hindered if employees lack the necessary skills to operate them effectively.

B. METHOD

1. Variable and Sample of Research

The independent variable in this research was digital transformation, while the dependent variable was employee performance. The digital transformation variable was measured from four indicators: the achievement of current technology use, the impact of implementing digital transformation, new digital activities, and the use of budget and costs (Damanhuri & Hartono, 2022). Meanwhile, employee performance variables were measured based on nine indicators, including quantity, quality, cost, competence, service, commitment, service interests, motivation, and leadership (Republic of Indonesia Law Number 5 of 2014).

This research had two intervening variables: organizational learning and innovation. The organizational learning variable ismeasured from five indicators: systems thinking, mental models, personal mastery, teamlearning, and building a shared vision (Nurhayani & Sulistio, 2018). Meanwhile, the innovation variable was measured based on fourteen indicators (Nwankpa & Roumani, 2016), including the development of technological innovations, innovation activities, competence through technological innovation, self-discipline through technological innovation, motivation from technological innovation, technological innovation, competence through organizational innovation, self-discipline through organizational innovation, and motivation.

The study examined various aspects of organizational innovation, including ease of maintenance and artistry, service innovation, increased team collaboration, and process innovations aimed at improving core processes and facilitating team collaboration. The population of this study comprised 178 individuals; however, a purposive sampling technique was employed for sample selection. The sample consisted of 163 civil servants from the Central Java Provincial Public Health Service, all of whom met the criteria of having a minimum of five years of service and being employed as civil servants.

2. Analysis Method

Data measurement in the research used the Smart PLS application version 3. Testing uses validity, reliability, and Partial Least Square (PLS) tests. The Likert scale was used in research, which helped measure the perceptions, attitudes, and opinions of a person or groupof people regarding social events. PLS can be used for all data scales, so it was powerful and did not require many assumptions or relatively small sample sizes. PLS was used not only in confirmatory theories but also in creating tests or propositional relationships (Indrajita et al., 2021). PLS was appropriate for confirming indicators through a construct/latent variable, factor, and concept. A multivariate analytical technique called SEM based on variance with the PLS method allowed statistical efficiency from many analyses of several latent variables simultaneously. Variables were converted into indicators. Then, variables were measured and described using a Likert scale with a score of 1-7.

C. RESULTS AND DISCUSSION
1. Data Description Results

The response results for the gender of the respondents were that most of the employees were dominated by female employees, namely 72%, while male employees were 28%. The response to the age factor was dominated by those aged 51 - 60 at 52%, and the smallest percentage of respondents' age is <30 years at 2%. The most extended working period is > 30 years. 32% and 14% havea working period of 5 < 10 years. Most postgraduate graduates working in the Central Java Provincial Health Service are 91 people or 56%, while only threeprofessionalgraduates or 2%. Most Central Java Provincial Health Service employees are from health sciences, namely 134 people or 82%.

2. Testing Research Instruments

The validity of this research was tested using two test models, namely the Measurement Model and Structural Model Tests. The results of the measurement model test can be seen in Figure 1 below:
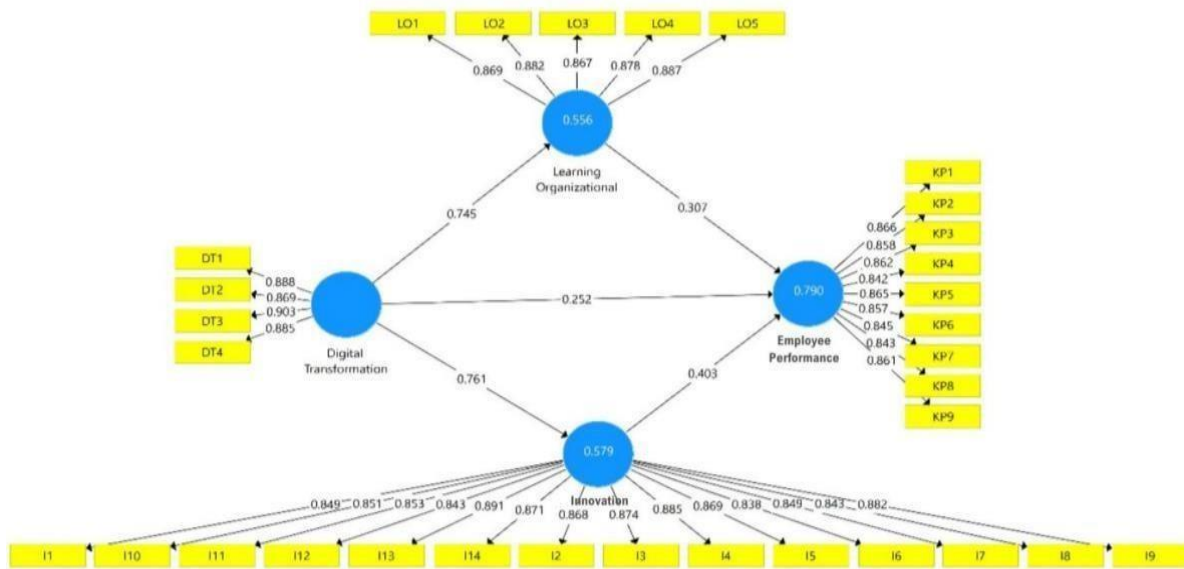
Figure 1. Outer Research Model

Figure 1 shows that the validity results of the convergent validity test for 32 indicators have a value above 0.7. This means no indicators were excluded or eliminated from this research because they are valid for use. The next test is to test the reliability of the variable with a minimum value of Cronbach's Alpha and Composite Reliability above 0.7. The results of Cronbach's Alpha and Composite Reliability in Table 1 are above 0.7, which means that all the variables used are reliable for testing existing hypotheses.

Table 1. Number of presenters

	Cronbach'sAlpha	Rho_A	Composite Reliability	Average Variance Extracted (AVE)
Digital Transformation	0,909	0,909	0,936	0,786
Innovation	0,973	0,974	0,976	0,743
Organizational Learning	0,925	0,926	0,943	0,769
Employee Performance	0,954	0,955	0,961	0,732

The next step is to perform a Structural Model test based on the R-Square test results in Table 2.

Table 2. R-Square Value for Endogenous Variables

	R Square	R Square Adjusted
Innovation	0,579	0,575
Employee Performance	0,790	0,783
Organizational Learning	0,556	0,551

Based on Table 2 above, it can be seen that the Innovation variable is influenced by Digital Transformation by 57%, while 43% is influenced by other factors not measured in this research. The Organizational Learning variable is influenced by Digital Transformation by 55%, while 45% is influenced by other factors not measured in this research. Employee Performance variable is influenced by Organizational Learning, Innovation, and Digital

Transformation by 79%, while 21% isinfluenced by other factors not tested in this research.

3. Hypothesis Test

A p-value test is needed through abootstrapping procedure to determine the significance of each existing correlation. The correlation can be significant if the value must be <0.05.

Table 3. The P-value for Each Relationship

	Original Sample (O)	T Statistics (|O/STDEV|)	P Values
Digital Transformation ▯ Innovation	0,761	6,895	0,000
Digital Transformation ▯Employee Performance	0,252	2,546	0,011
Digital Transformation ▯ Learning Organizational	0,745	6,267	0,000
Innovation ▯Employee Performance	0,403	3,406	0,001
Organizational Learning ▯ Employee Performance	0,307	2,420	0,016

Based on Table 3 above, it can be seen that the overall correlation in this study was significant and has a positive direction (with p-value <0.050). The digital transformation toward organizational learning has a positive direction (0.745>0) and is significant (0.000). So, the better the digital transformation performance of Central Java Health Service employees will undoubtedly improve and advance the quality of human resources, the first hypothesis can be accepted. This finding supports the study by (Prince et al., 2014) that digital transformation helps reduce weak connections in companies that rely heavily on others to complete crucial daily work.

Digital transformation towards innovation has a positive direction (0.761>0) and is significant (0.000). The significant increase in the implementation of digital transformation from the Central Java Health Service has increased the tendency for employees to create innovations that previously did not exist so that the second hypothesis can be accepted. This finding supports the study of (Kurniawan et al., 2021) that digital transformation maintains quality education in the digital era, thus optimizing innovation, interaction, and responsiveness and improving digital learning for individuals, especially for diverse groups of women at Regional Development Banks in Indonesia. Organizational learning on employee performance has a positive direction (0.307>0) and is significant (0.016). So, the more open opportunities for learning together that the Central Java Health Service has, the more likely it will perform well, and the third hypothesis can be accepted. This finding supports the study of (Larassaty, 2024) and research conducted by [18] that learning organizations will affect employee performance because sharing knowledge and learning can increase employee knowledge so that employees will grow and develop thinking skills to innovate in

achieving their performance.

Innovation on employee performance has a positive direction (0.403>0) and is significant (0.001). So, the higher the innovation of the Central Java Health Service employees resulting from mastery of knowledge, the more outstanding the achievement of good performance; the fourth hypothesis can also be accepted. This finding supports the study of [22] and research conducted by [23] that innovation makes employees' work enthusiasm grow again,

considering that the daily activities they go through are carried out continuously and the targets in work are certainly a reference in working.

The digital transformation variable on employee performance has a positive direction and significant, so hypothesis 5 can be accepted. This finding supports the study of [20] and research from (Maheshwari et al., 2023) that digital transformation encourages employee performance to develop further after introducing digital transformation, which can minimize work by cutting the time it takes to complete it. Digital transformation can influence employee performance to be more efficient by combining technology with employees who have skills and expertise.

4. Indirect Effect Testing

The results of the indirect effect test can be seen in Table 4 below:

Table 4. Indirect Effect Test Results

Regression	Path Coefficientvalue	P Values
Direct Correlation Digital Transformation □ Employee Performance	0,252	0,011
Indirect Correlation Digital Transformation □Learning Organization □ Employee Performance	0,229	0,027
Indirect Correlation Digital Transformation □Innovation □ Employee Performance	0,307	0,005

Based on the data above, organizational learning and innovation partially mediate the relationship between digital transformation variables and employee performance, so Hypothesis Six and Hypothesis Seven are accepted.

D. CONCLUSIONS AND SUGGESTIONS

Based on the research that has been done, organizational learning and innovation have a mediating role in the relationship between digital transformation and employee performance. However, digital transformation strongly influences employee performance through innovation at the Central Java Provincial Health Office. It shows that new digital activities and the achievement of current technology use have created innovation in processes, organizational technology, and better services. This innovation will be able to improve employee performance in its targets, but it still needs to improve in achieving their work behavior. This is because there are still many (52% of employees are old, even approaching retirement age). However, digital transformation at the Central Java Provincial Health Office still needs financing attention to constantly update and accelerate the development of innovations that impact employee performance. Digital transformation will be more effective when employees have good personal mastery and system thinking. This condition will accelerate the learning organization process, improving employee performance. Another limitation of this study is that the survey design was cross-sectional. Therefore, this method cannot fully explain the standard method variance and causality, although it is still consistent with previous research. Future research should use longitudinal and qualitative research to understand better how employees can cope with work problems effectively.

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