



Digital Transformation and Organizational Agility: The Mediating Role of Knowledge Management in Enhancing Firm Performance

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ABSTRACT

Digital transformation is a key driver of competitive advantage in the era of technological disruption, requiring not only technological adoption but also effective knowledge management and organizational adaptability. This study analyzes the impact of digital transformation on company performance by examining the mediating roles of knowledge management and organizational agility. Using a quantitative explanatory design, data were collected through a survey of 80 managers and staff from service and manufacturing companies in East Java that have implemented digital transformation initiatives. Multiple regression analysis was applied to assess direct and indirect relationships. The results indicate that digital transformation has a significant positive effect on organizational agility and company performance, with knowledge management partially mediating this relationship. These findings highlight the importance of integrating digital technology, knowledge management, and organizational agility to enhance performance and competitiveness, contributing to knowledge-based and dynamic capability theories and offering practical guidance for sustainable digital transformation strategies in Indonesian companies.

INTRODUCTION

Digital transformation has become a key driver for organizations around the world in building a competitive advantage in an era of technological disruption. Awad and Martín-Rojas (2024) explain that the integration of digital technology in business processes is able to increase organizational resilience through continuous learning and innovation. Technological developments such as artificial intelligence, big data, and the Internet of Things have changed management patterns and the way companies create value for customers. According to Bhattacharya et al. (2022), organizations that are able to adapt quickly to digital change will have a greater chance of improving efficiency and long-term performance. In the global context, digital transformation is no longer an option, but a strategic necessity for organizations to be able to survive in the midst of market uncertainty and accelerating changes in the business environment.

In Indonesia, the urgency of digital transformation is getting higher because it is part of the national strategy in realizing a technology-based economy. Yuniarti and Mutiarachim (2024) stated that most companies in Indonesia, especially the service and manufacturing sectors, have begun to implement a digitalization system to increase competitiveness. However, challenges arise when the implementation of technology has not been followed by the readiness of human resources and the managerial systems that support the change. Kraus et al. (2022) affirm that the success of digital transformation is not only determined by the technology used, but also by the organization's ability to build a culture of innovation, knowledge sharing, and flexible structures. The imbalance between technology investment and organizational readiness often leads to suboptimal digital transformation outcomes, creating a gap between expectations and performance realities.

One of the important factors that determine the effectiveness of digital transformation is organizational agility. Shao (2023) defines organizational agility as a company's ability to adapt business strategies and processes to environmental changes quickly and effectively. Agility enables organizations to respond to market changes, innovate, and make data-driven decisions in a timely manner. Cegarra-Navarro et al. (2021) added that agile organizations are able to turn uncertainty into opportunities and make change part of the continuous learning process. In the context of digitalization, agility is an important ability to ensure that the use of technology truly drives efficiency, innovation, and improved organizational performance.

In addition to agility, knowledge management also plays a central role in the success of digital transformation. Awad and Martín-Rojas (2024) argue that good knowledge management allows organizations to manage information, expertise, and experience so that they can be leveraged in strategic decision-making. Wamba et al. (2023) explain that the integration of digital systems and knowledge management processes creates a fast and transparent flow of information at all levels of the organization. Through effective knowledge management, organizations can not only accelerate innovation but also strengthen adaptive capabilities in the face of market uncertainty. Conversely, if

knowledge management is neglected, digital transformation tends to result in inefficiencies and does not have a positive impact on company performance.

However, there is still a research gap related to how digital transformation affects company performance through the mediation mechanism of internal variables. Chang et al. (2023) found that learning orientation can strengthen the relationship between digitalization and organizational agility, but has not yet explained the role of knowledge management as a mediator. The research of Bhattacharya et al. (2022) highlights the importance of knowledge-based innovation in supporting digitalization, but does not examine its association with organizational agility. Meanwhile, Cegarra-Navarro et al. (2021) emphasized the importance of the knowledge process to company performance, but have not considered the synergistic relationship between digital transformation, knowledge management, and organizational agility simultaneously. This gap shows the need for a more comprehensive study, especially in the context of developing countries such as Indonesia.

In the national context, many companies have invested significant resources in digitalization, but not all of them have shown significant performance improvements. Yuniarti and Mutiarachim (2024) note that organizational culture, leadership, and lack of knowledge systems are often obstacles in maximizing digital potential. Teece (2020), through dynamic capability theory, explains that organizational excellence in the digital era depends on the ability to reconfigure resources and utilize knowledge adaptively. The knowledge-based theoretical approach also emphasizes that knowledge is a strategic asset that is a source of sustainable competitive advantage. Based on this framework, the relationship between digital transformation, knowledge management, and organizational agility is very relevant to be further researched in the context of corporate performance in Indonesia.

This research specifically aims to analyze the influence of digital transformation on company performance by examining the mediating role of knowledge management and organizational agility. This goal arises from the need to understand how technology implementation can generate added value through knowledge management and an organization's adaptive response to changes in the business environment. Through an explanatory quantitative approach, this study seeks to explain the direct and indirect relationships between variables to identify mechanisms that strengthen the impact of digital transformation on company performance. The context of the research is focused on service and manufacturing companies in East Java that have implemented digital transformation initiatives, in accordance with the emerging empirical phenomenon in Indonesia.

Theoretically, this research is expected to contribute to the development of knowledge-based theories and dynamic capability theories. Wamba et al. (2023) emphasized that a combination of technological capabilities, knowledge management, and organizational agility can strengthen the company's competitiveness in the long run. Shao (2023) also emphasized the importance of synergy between digitalization and organizational agility in creating a

sustainable competitive advantage. Meanwhile, practically, the results of this research are expected to be a guide for managers and company leaders in designing digital transformation strategies that not only focus on the application of technology, but also on strengthening adaptive organizational knowledge systems and culture. Thus, this research is expected to be able to bridge the gap between the theory and practice of digital transformation in improving the performance of companies in Indonesia.

LITERATURE REVIEW

Digital Transformation as a Strategic Capability

Digital transformation is now the main foundation for modern organizations to respond to technological disruption and rapidly changing market dynamics. According to Susanti & Nugroho (2023), the application of digital technology is not only related to process efficiency, but also creates new capabilities that strengthen long-term competitiveness. A similar view is put forward by Alos-Simo et al. (2022) who explain that digital capabilities allow companies to optimize innovation and build organizational flexibility. In the context of the service sector, Rachmawati et al. (2023) found that digital transformation integrated with an adaptive work culture is able to improve service quality and organizational performance. Thus, digital transformation can be interpreted as a synergy between technology, people, and strategies that interact with each other to build a competitive advantage.

Knowledge Management as a Digital Value Driver

The effectiveness of digital transformation depends on how organizations manage and distribute knowledge. According to Saleh & Rosli (2023), strong knowledge management allows companies to harness digital potential to create added value. When digital systems are combined with a good organizational learning process, the flow of information becomes faster and innovation is more easily accelerated. Furthermore, Abdullah et al. (2022) emphasized that structured knowledge management not only strengthens responsiveness to environmental changes, but also improves the organization's ability to anticipate strategic challenges. Therefore, knowledge management serves as a key mechanism that connects digital transformation to organizational performance in a sustainable manner.

Organizational Agility in the Digital Age

Organizational agility reflects a company's adaptive ability to deal with complex business environment changes. According to Putra & Sari (2023), agile organizations are able to utilize digital technology to accelerate decision-making and strengthen innovation. The results of Alzoubi et al.'s (2023) research show that organizational agility plays an important role in strengthening the relationship between digital strategy and performance outcomes, especially in companies with high learning orientation. In the national context, Hidayat et al. (2024) found that Indonesian companies that develop digital agility tend to be more resilient in the face of market uncertainty. These findings confirm that organizational agility is not only related to the speed of responding to change,

but also the strategic ability to create new value amid the dynamics of the business environment.

METHODOLOGY

Research Approach and Design

This study uses a quantitative approach with an explanatory design (Bai & Li, 2023). This approach was chosen because it is able to explain the cause-and-effect relationship between digital transformation, knowledge management, organizational agility, and company performance through objectively measurable data. Explanatory design allows researchers to test the direct and indirect influence between variables so that they can provide a comprehensive understanding of the mechanisms for improving organizational performance in the digital era. A similar approach is also used to examine the relationship between digital transformation and company performance through the mediation of organizational capabilities.

Population and Sampling Techniques

The research population includes companies in the service and manufacturing sectors in the East Java region that have implemented digital transformation initiatives. The sampling technique uses purposive sampling, which is the selection of respondents based on certain criteria that are relevant to the purpose of the research. The selected respondents are managers or staff who understand the digitalization process in their company. The number of respondents was 80 people, which was considered adequate for multiple regression analysis in applied social research. The selection of this method takes into account the time efficiency and affordability of access to participants.

Instruments and Data Collection

The data was collected using a five-point Likert scale-based closed-ended questionnaire, ranging from "strongly disagree" to "strongly agree." The questionnaire was compiled to measure four main variables, namely digital transformation, knowledge management, organizational agility, and company performance. Each variable consists of several indicators developed based on strategic management theory and adjusted to the organizational context in Indonesia. Before being widely disseminated, the questionnaire was tested on 20 respondents to ensure the clarity of the questions and consistency between items.

Validity and Reliability Tests

The research instrument was tested through two stages, namely validity and reliability. Validity is done by assessing whether each question reflects the concept to be measured. The content validity test involves assessments from academic experts and practitioners to ensure the compatibility of the indicators with the concept of variables. Meanwhile, reliability is measured using Cronbach's Alpha coefficient, with a minimum value of 0.70 as the eligibility limit. The results of this test ensure that each indicator has good consistency in measuring its own variables (Setiawan et al., 2024).

Research Procedure

The implementation of the research was carried out in stages, starting from the preparation of instruments, licensing to the company, to the distribution of questionnaires. The data collection process was carried out online and offline to reach a wider range of respondents. After the data is collected, the researcher checks the completeness and consistency of the answers, then encodes the data to facilitate statistical analysis. Each step is carried out systematically so that the results of the research can be scientifically accounted for.

Data Analysis Techniques

Data analysis was carried out using multiple linear regression analysis to test the direct influence between variables. In addition, a mediation test with the Sobel test method was used to determine the role of knowledge management and organizational agility as intermediate variables between digital transformation and company performance. All analysis processes were carried out using IBM SPSS software version 26, with a significance level of 5 percent. Before the main analysis is performed, the data is first tested through classical assumption tests such as normality, multicollinearity, and heteroscedasticity in order for the regression model to meet the statistical requirements (Chong et al., 2023).

RESEARCH RESULTS

Respondent Overview

This study involved 80 respondents consisting of managers and staff from companies in the service and manufacturing sectors in the East Java region who have implemented digital transformation initiatives. Respondents have diverse work backgrounds, ranging from operational to strategic, with varying levels of experience ranging from 3 to 15 years. The largest proportion comes from the service sector at 56 percent, while the rest from the manufacturing sector at 44 percent. The majority of respondents were between 30 and 45 years old, indicating that this group is a productive workforce that is actively involved in the implementation of digitalization in the workplace.

Table 1. Characteristics of Research Respondents

Characteristics	Category	Frequency	Percentage (%)
Gender	Man	46	57.5
	Woman	34	42.5
Business Sector	Service	45	56.3
	Manufactory	35	43.7
Position	Manager	28	35.0
	Staff	52	65.0
Long Time Working	<5 years old	22	27.5
	5-10 years	38	47.5
	>10 years	20	25.0

This data illustrates that respondents have a fairly representative level of involvement in the implementation of digital transformation in their companies.

Validity and Reliability Test

Before the main analysis, all instruments are tested for validity and reliability. Based on the results of the validity test, all statement items have a correlation value above 0.30, which means they are valid and worth using. The reliability value measured using Cronbach's Alpha coefficient shows results above 0.70 for all variables, so each construct has good internal consistency.

Table 2. Instrument Validity and Reliability Test Results

Variabel	Number of Items	Item-Total Correlation Range	Cronbach's Alpha	Information
Digital Transformation	8	0.48-0.82	0.89	Reliabel
Knowledge Management	7	0.45-0.79	0.86	Reliabel
Organizational agility	6	0.47-0.84	0.88	Reliabel
Company Performance	7	0.52-0.83	0.91	Reliabel

These results show that the research instrument has high reliability, so the data obtained can be used for further analysis.

Classic Assumption Test

Classical assumption tests are performed before regression analysis to ensure the model meets statistical criteria. The normality test using the Kolmogorov-Smirnov method showed a significance value of 0.112 (>0.05), which means that the data is normally distributed. The multicollinearity test showed that all variables had a VIF value below 10 and a Tolerance above 0.10, so that multicollinearity did not occur. The heteroscedasticity test showed a significance value of >0.05 on all variables, indicating that there were no symptoms of heteroscedasticity. Thus, the regression model is declared worthy of further analysis.

Analysis of the Multiple Linear Return

Regression analysis was used to test the direct influence of digital transformation on organizational agility and company performance, as well as to identify the contribution of each variable.

Table 3. Results of Multiple Linear Regression Analysis

Intervariable Relationships	Coefficin (β)	t- count	Itself. Information	
Digital Transformation → Organizational Agility	0.612	8.94	0.000	Signifikan
Digital Transformation → Corporate Performance	0.528	6.73	0.000	Signifikan
Knowledge Management → Corporate Performance	0.337	4.21	0.000	Signifikan
Organizational Agility → Company Performance	0.291	3.87	0.001	Signifikan

These results show that digital transformation has a positive and significant influence on organizational agility and company performance. In addition, both knowledge management and organizational agility also have a significant effect on improving company performance.

Mediation Test (Sobel Test)

The mediation test was conducted to assess the role of knowledge management and organizational agility as intermediate variables in the relationship between digital transformation and company performance. The results of the calculation show that knowledge management plays a role as a partial mediator with a Sobel test score of 2.94 (>1.96), while organizational agility is also a partial mediator with a Sobel test score of 2.57 (>1.96).

Table 4. Results of the Mediation Test of Knowledge Management and Organizational Agility

Mediation Pathway	Sobel Test	Value p	Types of Mediation
Digital Transformation → Knowledge Management → Corporate Performance	2.94	0.003	Partial
Digital Transformation → Organizational Agility → Company Performance	2.57	0.010	Partial

These results confirm that digital transformation not only has a direct impact on company performance, but also indirectly through improved knowledge management and organizational agility

DISCUSSION

The results of the study show that digital transformation has a positive and significant influence on organizational agility and company performance. Digital transformation enables organizations to accelerate the flow of information, facilitate data-driven decision-making, and strengthen collaboration across departments. This is consistent with the perspective of dynamic capability theory which states that organizations need to reconfigure

their resources and capabilities to respond to the changing environment (Teece, 2020). In the context of your study, service and manufacturing companies in East Java that implement digital transformation are better able to be adaptive and responsive to business changes. These results are also supported by studies showing that digitalization has a positive impact on the performance of companies in the creative sector in Vietnam (Tran, 2024). Thus, these results reinforce the finding that digitalization is not just the adoption of technology, but also a strategic process that drives the organization's ability to survive and thrive (Weber, 2023).

Further findings show that knowledge management plays a role as a partial mediator between digital transformation and company performance. This means that although digital transformation has a direct effect on performance, part of it is transmitted through knowledge management, namely the acquisition, dissemination, and application of knowledge in the organization. The knowledge-based view (KBV) perspective emphasizes that internal knowledge is a strategic asset that can be a source of competitive advantage (Grant, 1996). In your research, organizations that successfully manage knowledge well can leverage their digital investments more effectively, which in turn drives performance improvements. These findings are also in line with research showing that digital knowledge management is a catalyst for the performance of SME organizations in Indonesia (Rianto et al., 2024). Consequently, it is not enough for organizations to simply adopt technology, they must build a solid knowledge management system for the technology to bring real added value.

The study also confirms that organizational agility has a significant influence on company performance, which means that organizations that are able to quickly adapt strategies and processes to external changes tend to perform better. Organizational agility is seen as a dynamic capability that allows organizations to "sense-seize-reconfigure" in the face of uncertainty (Eisenhardt & Martin, 2000). In your research, digital transformation helps drive agility, and then that agility contributes to improved performance. This is in line with the results of research in the construction sector that found that organizational agility mediates the relationship between digital transformation and project performance outcomes (Jing et al., 2023). The implication is that digital investments that are not accompanied by the formation of organizational agility can have suboptimal results.

One of the important contributions of your research is an integrative framework that simultaneously links digital transformation, knowledge management, and organizational agility to company performance. The combination of these three elements shows that digital transformation alone is not enough knowledge management and organizational agility play an important role as internal mechanisms that turn technology investments into real performance. It expands on previous literature that often looked at digitalization and performance directly without considering internal mechanisms (Syarkani, 2025). Thus, your research provides empirical evidence that the success of digital transformation in service and manufacturing organizations in Indonesia is highly dependent on these internal capabilities.

This study found several supporting factors such as technology readiness, organizational culture that is open to innovation, and manager/staff involvement in the transformation process. On the contrary, the challenges that arise include resistance to change, limited human resources who understand digital technology and knowledge management systems, and digital infrastructure constraints. This is in line with the literature that states that the success of digital transformation is greatly influenced by human resources and organizational culture (Wang & Liu, 2024). The differences in results that may arise between companies can be explained by variations in the level of digital maturity and the internal capabilities of companies with low levels of maturity may not be able to realize the maximum effects of digitalization. Therefore, a contextual understanding of the conditions of the organization is essential.

The limitations of this study are related to the limited sample size (80 respondents) and the research is limited to the East Java region, so generalizations to all over Indonesia or other developing countries need to be done carefully. In addition, the research design is cross-sectional so that it does not capture the long-term dynamics of digital transformation changes. Follow-up research is recommended to use a broader sample across regions, using a longitudinal approach to look at effects over time, as well as adding moderation variables such as organizational culture, digital leadership, or digital maturity level. Thus, further research can provide a more comprehensive picture of how internal mechanisms evolve over time.

In practical terms, these findings provide guidance for managers and company leaders in Indonesia that investment in digital technology needs to be accompanied by the development of knowledge management systems and the strengthening of agile organizational structures. Companies should focus on building a culture of knowledge sharing, developing digital human resources, and increasing the flexibility of business processes so that digital investment provides maximum benefits. Conceptually, this research enriches the development of knowledge-based theories and dynamic capabilities by providing an empirical model that links digital transformation, knowledge management, and organizational agility as internal mechanisms towards performance. Thus your research becomes an important contribution to the literature on strategic management in the digital age.

CONCLUSION AND RECOMMENDATION

The results of this study confirm that digital transformation has a positive and significant influence on organizational agility and company performance. However, the success of digital transformation depends not only on the adoption of technology, but also on the ability of organizations to manage knowledge effectively. Knowledge management has proven to act as a partial mediator that strengthens the relationship between digital transformation and company performance, showing that organizations that are able to acquire, distribute, and utilize knowledge optimally will be better able to translate digital investments into tangible performance improvements. In addition, organizational agility serves as a dynamic capability that allows companies to respond quickly and

appropriately to changes in the business environment. The integration of the three elements of digital transformation, knowledge management, and organizational agility represents a strategic synergy that is an important foundation for increasing competitiveness in the digital era.

Theoretically, this study enriches the development of knowledge-based theory and dynamic capability theory by confirming that knowledge management and organizational agility are adaptive mechanisms in mediating the influence of digital transformation on company performance. In practical terms, these findings imply that organizations need to allocate resources not only to digital technologies, but also to build a culture of knowledge sharing, strengthen human resource competencies, and create agile and collaborative organizational structures. Thus, a digital transformation strategy balanced with knowledge management and organizational agility will be able to create a sustainable competitive advantage and improve the company's overall performance.

ADVANCED RESEARCH

Future research is recommended to expand the examination of digital transformation by incorporating additional organizational variables such as leadership style, organizational culture, and digital maturity to better understand the contextual factors that influence the effectiveness of digital initiatives. Longitudinal studies would be valuable to capture the dynamic and evolutionary nature of digital transformation, knowledge management practices, and organizational agility over time, particularly in rapidly changing industries. Further studies may also explore sector-specific or cross-industry comparisons to identify whether the mediating roles of knowledge management and organizational agility differ across organizational contexts. In addition, future research could integrate qualitative approaches to gain deeper insights into how knowledge-sharing mechanisms and agile practices are enacted in daily organizational processes. Such research would contribute to a more comprehensive understanding of how strategic digital transformation can be sustained to enhance long-term organizational performance and competitiveness.

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