

Knowledge Management, Leadership Type, and Organizational Culture's Effects on Digital Transformation and Innovation at Indonesian Classification Agency

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Abstrak

Organisasi harus terus menyesuaikan diri dengan peningkatan teknologi di dunia digital yang terus berubah agar tetap kompetitif. Transformasi digital sangat dipengaruhi oleh gaya kepemimpinan, meskipun signifikansi budaya organisasi sebagai komponen mediasi masih sedikit dipahami. Studi ini meneliti bagaimana budaya organisasi memengaruhi hubungan antara transformasi digital dan gaya kepemimpinan. Studi ini menggunakan pendekatan teknik kuantitatif untuk mengumpulkan data dari sampel representatif perusahaan di berbagai industri. Temuan menunjukkan bahwa budaya perusahaan memiliki peran mediasi utama dalam bagaimana gaya kepemimpinan memengaruhi aktivitas yang terkait dengan transformasi digital. Secara khusus, budaya yang inovatif dan fleksibel yang sejalan dengan gaya kepemimpinan transformasional meningkatkan kemanjuran inisiatif transformasi digital. Di sisi lain, ketidaksesuaian dalam budaya perusahaan dan kepemimpinan dapat mempersulit adopsi teknologi digital. Temuan ini menggarisbawahi pentingnya menumbuhkan budaya organisasi yang mendukung dan memperkuat upaya kepemimpinan dalam mendorong transformasi digital. Studi ini berkontribusi pada literatur dengan menyoroti hubungan sinergis antara kepemimpinan, budaya, dan transformasi digital, yang menawarkan implikasi praktis bagi para manajer dan pembuat kebijakan yang bertujuan untuk mendorong inisiatif digital yang sukses.

Kata Kunci: *transformasi digital; budaya organisasi; organisasi digital; kepemimpinan*

Abstract

Organizations must constantly adjust to technology improvements in the changing digital world in order to stay competitive. Digital transformation is significantly influenced by leadership style, although organizational culture's significance as a mediating component is still little understood. This study looks into how organizational culture influences the link between digital transformation and leadership style (Negara et al., 2024). The study employed a quantitative technique approach to gather data from a representative sample of firms across many industries. The findings show that corporate culture has a major mediating role in how leadership style affects activities related to digital transformation. In particular, innovative and flexible cultures that are in line with transformational leadership styles improve the efficacy of digital transformation initiatives. On the other hand, a mismatch in corporate culture and leadership might make it more difficult for digital technologies to be adopted. These findings underscore the importance of cultivating an organizational culture that supports and amplifies leadership efforts in driving digital transformation. The study contributes to the literature by highlighting the synergistic relationship between leadership, culture, and digital

transformation, offering practical implications for managers and policymakers aiming to foster successful digital initiatives.

Keywords: *digital transformation; organizational culture; digital organization; leadership.*

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INTRODUCTION

Public service digitization is being deemed imperative by many governments worldwide (Indriawati & Hasbi, 2023). In addition to having a positive impact on companies, a better government brought about by digitalization will be able to increase public participation and promote economic growth. Over the past ten years, an increasing number of nations have started offering their citizens digital services. Thus, the goal of this study is to define the characteristics of digital transformation in the public sector and how it relates to knowledge management by analyzing the evolution of the digital government literature in order to address this development (Saragih et al., 2024).

A leader is someone who establishes direction by creating a vision for the future, conveying that vision to subordinates, and motivating them to overcome obstacles. Therefore, the primary attribute that sets successful organizations apart from unsuccessful ones is their dynamic and effective leadership, which is able to convey their vision and motivate employees to overcome any challenge (Azzahra & Syarifuddin, 2024). One of the challenges that a business or organization frequently encounters is the challenge of sustaining employee motivation. In actuality, motivation plays a critical role in maintaining an individual's performance, which in turn influences the organization's overall success. If one lacks drive to work, their output will not be at its best. The significance that results from a person's involvement with the circumstance is contained in the motivation itself (Gerald & Syarifuddin, 2022).

Every person possesses a fundamental source of motivation as well as varying degrees of motivation at various points in time. "The processes that account for an individual's intensity, direction, and persistence of effort toward achieving a goal" is what Robbins (2009) defines as motivation. It is the readiness to put in a lot of effort toward achieving organizational objectives, subject to the effort's capacity to satisfy a particular demand. Good leadership is defined as an individual's endeavor to persuade others in a group to behave in a certain way without resorting to coercion. "Leadership is an attempt to use influence to motivate individuals to accomplish some goal," according to Gibson et al. (2009).

There is a lack of detailed research on this topic. Although a lot of research has been done on the impact that leadership style plays in accelerating digital transformation, not enough has been done to examine organizational culture's mediating function. Previous studies have mostly concentrated on the direct connection between leadership and digital transformation, frequently ignoring the intricate interaction between corporate culture and leadership style. While some research has recognized the impact of organizational culture on digital transformation, a thorough grasp of the ways in which diverse leadership styles interact with various cultural settings to influence the results of digital transformation is lacking.

Furthermore, organizational culture has been treated more often in the past as a static background than as a dynamic factor that can be influenced by leadership and thus affect the course of digital transformation.

This gap necessitates a thorough examination of the ways in which organizational culture mediates the relationship between leadership style and digital transformation, with an emphasis on identifying particular cultural characteristics that support or obstruct the process of digital transformation under various leadership philosophies. This study's main goal is to investigate how organizational culture functions as a mediator in the link between leadership style and digital transformation in businesses. The study's specific objectives are to:

Examine the effects of various leadership philosophies on projects for digital transformation.

Examine which organizational cultural traits are most helpful for a successful digital transition.

Examine the degree to which leadership style and the results of digital transformation are mediated by corporate culture.

Determine the particular cultural characteristics that support or undermine the ability of different leadership philosophies to propel digital change.

Give CEOs actionable advice on how to cultivate a corporate culture that encourages and facilitates digital change.

2.LITERATURE REVIEW

1.1 Leadership

When one group member inspires or transforms the other members of the group, leadership emerges. As a change agent, a leader needs to be able to inspire others to work together to accomplish organizational objectives quickly and effectively. According to Robbins (2009), there are four types of leadership behaviors: directive/instrumental, supporting, participative, and achievement-oriented. Each of these leadership behaviors has the following definition (Chan, et al., 2001):

- a. Directive leadership is a kind of leadership where the leader demonstrates to subordinates how to perform a task properly and communicates expectations to them. Put differently, this type of leadership gives precise instructions on how to finish tasks, deadlines, rules, and unambiguous criteria that workers must meet.
- b. An approachable, compassionate, and considerate leadership style toward the needs and circumstances of employees is known as supportive leadership.
- c. Participative leadership is a style of leadership in which the leader solicits recommendations from their followers, takes those suggestions into consideration before making a decision, and occasionally even allows followers make their own decisions.

- d. A leader that practices achievement-oriented leadership assists followers in implementing objectives, which motivates followers to take ownership of reaching those objectives and offers incentives for reaching them.

1.2 Digital Transformation

Information diffusion and access are accelerated by the advancement of information technology. Educational institutions now have the ability to handle student data, financial information, and administration more skillfully thanks to the switch from manual recording to management information systems. Through the use of modern technology, educational institutions may enhance the quality of their offerings, expedite administrative procedures, and give students, faculty, and staff a better overall experience (Idris, 2015).

Although digital transformation has great promise for educational office administration, there are certain drawbacks as well. Because educational institutions keep a substantial quantity of personal data, data security is an important concern. Information security and integrity must always be maintained, particularly in light of the growing danger posed by cybersecurity. Furthermore, it is becoming more and more crucial to take ethical issues into account while gathering, using, and storing data (Putri, 2017).

The use of digital transformation in educational office administration has yielded several advantageous outcomes that considerably enhance the efficacy and productivity of educational establishments. A primary advantage is a rise in production. Educational institutions may save time and human resources by automating repetitive administrative duties like student data management, finance, and staff. This frees up more time for curriculum creation and high-quality instruction (Rayhan et al., 2021). In addition, digital transformation has a positive impact in terms of faster access to information. The integration of sophisticated information systems allows educational staff to easily access and share relevant data, increasing connectivity between units within the institution. This provides a more solid basis for informed decision-making and allows for faster reactions to changes or challenges that arise (Rachmawati & Hidayati, 2023). In the context of collaboration, digital transformation supports increased collaboration among staff and departments of educational institutions.

Digital communication technologies, learning management systems, and online collaboration platforms allow for more effective information sharing, increase team member engagement, and create a more dynamic and linked work environment (Halim, 2020). Although these are highly favorable benefits, the theoretical research also takes into account any difficulties that may develop in the course of digital transformation. A crucial concern that has to be addressed is data security, given the volume of private data that educational institutions handle. Priorities to guarantee data integrity include resolving cybersecurity threats and safeguarding the privacy of instructors, staff, and students.

1.2 Organizational Culture

Members' understanding of the organization's beliefs, values, policies, and customs—which shape their attitudes and behaviors at work and set it apart from

competitors—is referred to as organizational culture (Robbins & Judge, 2013). Members of an organization are taught its values, beliefs, norms, and rules through its culture. All of it is decided upon and implemented by each member until it becomes the organization's culture. The attitudes and actions of employees are shaped and reinforced by the organizational culture. Organizational values and beliefs will eventually permeate into individual beliefs, or the other way around. The organization's culture sets it apart from other organizations by the unique expertise it possesses. Organizational culture is defined by Robins (2013) in terms of seven qualities.

Initially, creativity and taking chances (Creativity and Taking Chances). Next, pay close attention to the details (Attention to Detail). Next is outcome orientation, which is the third strategy. People Oriented is the fourth factor. Team orientation is the fifth (Team Oriented). Aggression (Aggressiveness) comes in sixth. Finally, stability. This research focuses on the following aspects of organizational culture: creativity, teamwork, awareness of the organization's vision and objective, and devoting time and resources to spiritual growth.

3.METHODOLOGY

The PLS-SEM (Partial Least Squares) approach is being used in this quantitative study. There are many kinds of latent variables in this study, including mediators, dependent factors, and independent variables (independent variables). Transformational leadership is the study's independent variable. Knowledge sharing behavior is the dependent variable in this study, and motivation and corporate culture act as mediators.

To accomplish the study aims, the research technique was conducted. The issue formulation, theoretical underpinnings, hypothesis formulation based on the chosen model, instrument compilation, population, instrument testing and development, data collecting via instrument analysis, research findings and recommendations are all included in the research process. The study was carried out from early January to May 2023 with a sample size of 100 participants. In order to use PLS with a maximum of five arrows pointing to the latent variable, the number of participants has satisfied the necessary conditions. In this study, survey data were gathered. Using this approach, researchers gather information about individuals or samples of the population to explain the attitudes, beliefs, actions, or traits of the group (Cresswell, 2012).

In this procedure, researchers collect quantitative data using a closed questionnaire in the form of a Likert scale with a scale range of 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree. Data analysis techniques are carried out by measuring the validity and reliability of the indicators of each variable (outer model), descriptive statistical analysis, testing the relationship between latent variables (inner model), and hypothesis testing. The purpose of the measurement model, also known as the outer model, is to assess the reliability and validity of each variable's indicator model. The link between latent variables and their indicators will be clarified by this model. This study tested reliability, discriminant validity, and convergent validity as part of the outer model test. The inner model, also known as the structural model, seeks to forecast the link between latent variables. Two test types are

used in inner model testing: path coefficient analysis through correlation tests and determination coefficient analysis (DCF2) tests.

Analyzing the route coefficient is the process of doing hypothesis testing. The hypothesis is rejected if the path coefficient value is equal to or less than zero. Nonetheless, the hypothesis is accepted if the route coefficient value is higher than zero. Hypothesis testing through the Smart-PLS3.0 application is carried out by looking at the magnitude of the path coefficient value. Hypothesis testing through the Smart-PLS3.0 application is also carried out by looking at the magnitude of the specific indirect effect value to see the influence between variables through the mediator variable

4. RESULT

The correlation or link between an observable variable (indicator) and its corresponding latent construct in a Partial Least Squares Structural Equation Modeling (PLS-SEM) framework is referred to as "outer loading" in SmartPLS. When analyzing the measurement model, this metric is essential for determining the validity and reliability of the constructs.

Outer loadings show how effectively each indicator represents the underlying latent variable in a reflective measurement paradigm, where indicators are thought to reflect or be produced by the latent construct. Better reliability is shown by stronger correlations between the indicator and the latent construct, which are often indicated by outer loadings over 0.7. If the indicator's outer loading is less than 0.7, it might not be able to sufficiently capture the latent construct and should be reassessed or perhaps taken out of the model.

Table 1: Outer Loadings

Organizational Culture	Leadership Styles	Digital Transformation
0,708		
0,740		
0,912		
0,754		
0,810		
0,887		
0,790		
0,868		
0,858		
0,824		
0,724		
0,892		
0,763		
		0,718
		0,878
		0,857
		0,814

		0,836
		0,837
		0,773
		0,774
		0,837
		0,745
		0,809
		0,864
		0,865
		0,862
	0,721	
	0,829	
	0,828	
	0,804	
	0,847	
	0,855	
	0,721	
	0,740	

In the structural model, a route coefficient represents the direct influence. The intensity and direction of the association between the two variables are measured by this coefficient.

Standardized path coefficients normally fall between -1 and +1. An inverse association is shown by a negative coefficient, whereas a positive coefficient shows a positive link. When a predictor variable has a statistically significant direct effect on a dependent variable, it does so independently of other factors in the model.

For instance, the direct effect would measure how much leadership style directly affects employee performance (the dependent variable) in the study of the relationship between leadership style and employee performance (the independent variable), excluding the influence of any mediating variables.

Table 2: Direct Effects

	Organizational Culture	Leadership Styles	Digital Transformation
Organizational Culture			0,482
Leadership Styles	0,825		0,434
Digital Transformation			

In the structural model, a route coefficient represents the direct influence. The intensity and direction of the association between the two variables are measured by this coefficient. Standardized path coefficients normally fall between -1 and +1. An inverse association is shown by a negative coefficient, whereas a positive coefficient shows a positive link.

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In SmartPLS, an indirect effect refers to the impact of an independent variable on a dependent variable that is mediated through one or more intermediary variables, known as mediators. This effect represents how much of the relationship between the independent and dependent variables is explained by the mediator(s) rather than occurring directly.

An indirect effect occurs when an independent variable influences a mediating variable which in turn influences the dependent variable.

This creates a chain of relationships: $X \rightarrow M \rightarrow Y$.

Calculating Indirect Effects:

The indirect effect is calculated as the product of the path coefficients along the mediation chain. For example, if the path coefficient from X to M is denoted by a, and the path coefficient from M to Y is denoted by b, the indirect effect of X on Y through M is $a * b$.

Interpretation:

The magnitude of the indirect effect indicates how much of the total effect of the independent variable on the dependent variable is mediated by the mediator.

A significant indirect effect suggests that the mediator plays an important role in the relationship between the independent and dependent variables.

Total Effect:

The total effect of an independent variable on a dependent variable is the sum of its direct effect and all indirect effects.

In other words, Total Effect = Direct Effect + Indirect Effect(s).

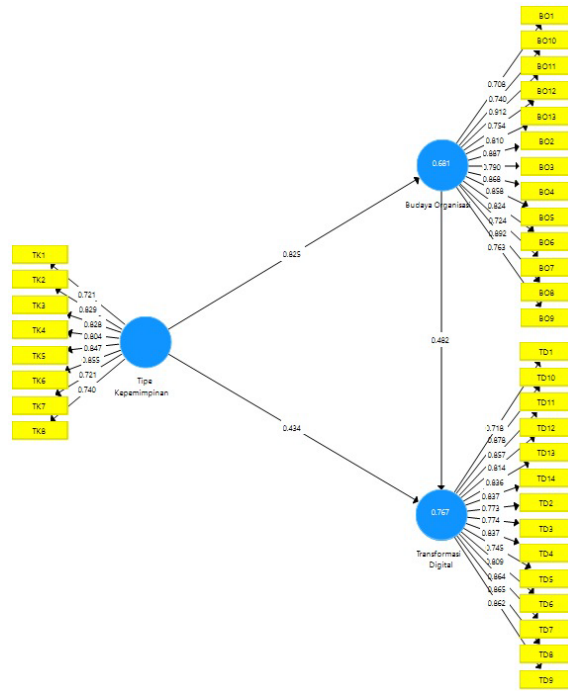


Figure 1: Path Result

Indirect vs. Direct Effects:

Direct Effect: The direct influence of the independent variable on the dependent variable without involving any mediators.

Indirect Effect: The influence of the independent variable on the dependent variable that occurs through one or more mediators.

Example in a Model:

Suppose you have the following variables:

Independent Variable (X): Leadership Style

Mediator (M): Employee Motivation

Dependent Variable (Y): Job Performance

The indirect effect would be the influence of Leadership Style on Job Performance through Employee Motivation.

If the path coefficient from Leadership Style to Employee Motivation is a , and from Employee Motivation to Job Performance is b , the indirect effect would be $a * b$.

If both a and b are positive and significant, it means that Leadership Style enhances Employee Motivation, which in turn boosts Job Performance.

Assessing Significance:

In SmartPLS, the significance of indirect effects is often tested using bootstrapping, which provides confidence intervals and p-values to determine whether the indirect effect is statistically significant.

Importance in Structural Equation Modeling:

Indirect effects are crucial for understanding the underlying mechanisms of relationships within a model. They help to explain how and why certain effects occur, providing deeper insights into the data.

Table 3: Indirect Effects

	Organizational Culture	Leadership Styles	Digital Transformation
Organizational Culture			
Leadership Styles			0,398
Digital Transformation			

5. CONCLUSION

For modern firms to successfully navigate the challenges of the digital era, there must be a connection between organizational culture, leadership styles, and digital transformation. The foundation that forms and sustains the attitudes, beliefs, and behaviors required for digital transformation is organizational culture. This change is mostly driven by leadership styles, especially those who are inclusive, flexible, and visionary since they promote a culture of creativity, teamwork, and ongoing learning. Aligning company culture with the strategic objectives of digital transformation requires effective leadership. Effective leaders can help their people navigate the obstacles of digitalization and maintain the organization's agility, competitiveness, and adaptability to change by recognizing and utilizing the strengths of their organizational culture.

On the other hand, if corporate culture and leadership styles are out of sync, resistance, inefficiency, and even failure may result from the transformation process. In conclusion, a comprehensive approach to management and leadership in the digital age is crucial due to the interaction between organizational culture, leadership philosophies, and digital change. Organizations may effectively manage the challenges of digital transformation and achieve sustainable development and competitiveness by fostering a supportive corporate culture and implementing leadership styles that encourage digital innovation and flexibility.

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Referensi :

- Adnan, A. Z., Rahayu, A., Hendrayati, H., & Yusuf, R. (2021, February). The role of electronic customer relationship management (E-CRM) in improving service quality. In *Journal of Physics: Conference Series* (Vol. 1764, No. 1, p. 012051). IOP Publishing.
- Azzahra, E., & Syarifuddin, S. (2024). Analisis pengaruh budaya organisasi dan komitmen organisasi terhadap kinerja karyawan pada PT Telekomunikasi Indonesia (persero) tbk wilayah Telekomunikasi Bogor. *JUPI (Jurnal Penelitian Pendidikan Indonesia)*, 10(1), 485-499.
- Geraldi, A., & Syarifuddin, S. (2022). Pengaruh Organizational Citizenship Behavior (OCB) Dan Disiplin Kerja Terhadap Kinerja Karyawan Wilayah Telekomunikasi Jember. *SEIKO: Journal of Management & Business*, 4(3), 523-531.
- Indriawati, M. L., & Hasbi, I. (2023). Strategy for Development of Istiqomah Pottery SMEs in Paseban Village Using the Smart Business Map. *Kontigensi: Jurnal Ilmiah Manajemen*, 11(1), 44-51.
- Negara, A. B. P., Pradana, M., Silvianita, A., Rubiyanti, N., Madiawati, P. N., & Nabila, F. S. (2024). Optimizing transformational leadership and knowledge management as keys to innovation. *Journal of Infrastructure, Policy and Development*, 8(4), 4071.
- Nugraha, D. W., Ismail, H., Wardhana, A., Wijaksana, T. I., & Yunani, A. (2023, December). A systematic literature review: implementation of ERP systems in logistics companies supply chain management in developed and developing countries. In *International Conference on Mathematical and Statistical Physics, Computational Science, Education and Communication (ICMSCE 2023)* (Vol. 12936, pp. 257-264). SPIE.
- Putri, A. A., Wardhana, A., & Pradana, M. (2021). The Influence of Service Quality and Consumer Trust on Consumer Loyalty of Carousel Apps. In *Proceedings of the International Conference on Industrial Engineering and Operations Management* (pp. 2884-2889).
- Saragih, R., Kurnianingrum, D., Fakhri, M., & Luturlean, B. S. (2024, June). Tracing trends in student citizenship behavior: a brief bibliometric review. In *International Conference on Medical Imaging, Electronic Imaging, Information Technologies, and Sensors (MIEITS 2024)* (Vol. 13188, pp. 328-334). SPIE.
- Wardhana, A., Kartawinata, B. R., Akbar, A., & Muslimin, I. (2021). The Effect of the Use of Influencer on The Purchase Decision of MSME Culinary Products in Indonesia (Study On Snack Product Kripik Belings On Instagram). In *Proceedings of the International Conference on Industrial Engineering and Operations Management* (pp. 190-198).
- Yuliarni, N., Hurriyati, R., Disman, D., Hendrayati, H., & Warlina, L. (2023). Marketing strategy of ecotourism in Uzbekistan and Indonesia. *Journal of Eastern European and Central Asian Research (JEECAR)*, 10(4), 638-649.