

THE STRATEGIC IMPLEMENTATION OF DIGITAL TRANSFORMATION AT PERUMDA TIRTA PAKUAN BOGOR

Aditya Putra Nugraha*, Raden Dikky Indrawan, Linda Karlina Sari

School of Business, IPB University
Jl. Raya Pajajaran, Bogor 16128, Indonesia

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Abstract:

Background: In 2021, the PERUMDA Tirta Pakuan Bogor initiated a digital transformation program with the primary objective of improving operational efficiency and enhancing customer service. However, after four years of implementation, the transformation has yet to show significant impact, as evidenced by increasing annual expenditures and the company's continued failure to achieve targeted water supply continuity.

Purpose: This study aims to identify the key factors influencing the implementation of digital transformation at PERUMDA Tirta Pakuan and formulate strategic recommendations to strengthen this implementation. By understanding these driving factors, organizations can enhance their operational performance and service delivery.

Design/methodology/approach: This research employed a non-probability sampling method, gathering valid responses from 200 employees and 4 expert informants. Structural equation modeling–partial least squares (SEM-PLS) was used to test hypotheses and evaluate the complex relationships among variables. In addition, the analytical hierarchy process (AHP) was applied to develop a prioritized strategy to support digital transformation initiatives.

Findings/Results: The findings reveal that organizational culture, resources, and technology have a positive and significant influence on the implementation of digital transformation. Furthermore, among the indirect effects tested, only organizational culture significantly influences digital transformation implementation through the mediating variable of digital transformation acceptance attitude. The strategic analysis using AHP indicates that resources are the top priority factor in supporting digital transformation. Consequently, the most recommended strategy is the optimization of the Supervisory Control and Data Acquisition (SCADA) system, as it is considered capable of enhancing productivity, efficiency, service quality, and overall performance growth.

Conclusion: This study highlights the importance of organizational culture and resources in enabling successful digital transformation, with culture playing a mediating role in shaping attitudes toward change. The strategic prioritization of SCADA system optimization is essential to maximize the benefits of digital initiatives.

Originality/value (State of the art): This study contributes to the growing body of knowledge on public sector digital transformation by offering empirical insights into the interrelationships among organizational culture, resources, technology, and transformation success. It also provides strategic recommendations using a hybrid SEM-PLS and AHP approach, offering practical value to public utilities aiming to modernize their operations

Keywords: digital transformation, organizational culture, technology, public utilities, SCADA system

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*Corresponding author:
Email: adityapn61@gmail.com

INTRODUCTION

The advancement of digital technology has significantly transformed the way public service organizations operate, including regional water utilities (El-Din et al. 2021; Nugroho et al. 2023). Digital transformation is no longer an option but a necessity for public institutions aiming to improve efficiency, transparency, and service quality (Dwivedi et al. 2021). In line with this trend, PERUMDA Tirta Pakuan Bogor, an institution under the Bogor City Government responsible for providing clean water, has initiated various digital transformation programs in the past four years. These initiatives include the adoption of a geographic information system (GIS), supervisory control and data acquisition (SCADA), *sistem informasi manajemen arsip dan kesektarian (SIMAK)*, and key performance indicator (KPI) applications.

Despite the implementation of these technologies, PERUMDA Tirta Pakuan has not yet experienced significant improvements in operational efficiency or customer service outcomes. The company's operational expenditure continued to increase, from IDR 242 billion in 2019 to IDR 307 billion in 2023, even after the digital initiatives were launched. Furthermore, the company has yet to achieve 24-hour water service continuity across its entire service area, indicating that some customers still experience intermittent or limited access to water. This is consistent with the challenges found in many digital transformation efforts in the public sector, which often face structural, organizational, and cultural barriers (Henriette et al. 2016; Singh et al. 2020).

One critical factor influencing the effectiveness of digital transformation is the readiness and capability of human resources. PERUMDA Tirta Pakuan currently employs 451 staff members, the majority of whom (52%) are from Generation X (ages 44–56) and have a senior high school educational background (54%). This demographic profile presents unique challenges, as limited educational qualifications can hinder digital literacy and the ability to operate modern information systems effectively (Hasrianti, 2023; Kusnandar et al. 2022). Research has shown that digital skills are strongly associated with both educational background and generational characteristics, where older employees and those with lower formal education tend to struggle more with digital adaptation (Vial, 2019; López-Pérez et al. 2020).

This study offers a novel contribution by comprehensively examining the implementation of digital transformation at PERUMDA Tirta Pakuan Bogor, a regional public utility company that has adopted various digital systems such as GIS, SCADA, AMR, and SIMOTIP since 2021. Despite these efforts, the company has yet to demonstrate significant improvements in operational efficiency and customer service. The focus of this study is on identifying internal supporting and inhibiting factors, including demographic aspects and the educational background of employees, the majority of whom are from Generation X and hold senior high school qualifications. Unlike previous studies that tend to adopt a general perspective, this study provides a contextualized and focused approach to the real challenges faced by PERUMDA Tirta Pakuan. Moreover, it aims to formulate practical strategies to overcome these barriers and strengthen the implementation of digital transformation within the organization.

Given the gap between technological investment and service outcomes, it is imperative to conduct a comprehensive study to identify the key factors influencing the implementation of digital transformation at PERUMDA Tirta Pakuan Bogor. Such a study is essential for formulating targeted strategies to enhance the effectiveness and sustainability of digital initiatives in regional public service providers (Susanto & Wibowo, 2021; Alawadhi et al. 2016). Through this research, strategic recommendations can be proposed to support the company's transition towards becoming a more adaptive, efficient, and citizen-centered organization in the digital era.

In response to the problems outlined above, it is crucial to conduct a systematic investigation into the dynamics that shape the success or failure of digital transformation initiatives in regional public service institutions. PERUMDA Tirta Pakuan Bogor, as a case in point, has undertaken significant digitalization efforts through the implementation of advanced technological systems. However, the anticipated improvements in operational efficiency and service delivery have not been fully realized, suggesting the presence of underlying organizational, human resource, and structural barriers. Understanding these internal and external factors is essential for formulating targeted strategies to enhance digital integration and ensure the sustainability of transformation efforts. Therefore, this study seeks to achieve the following objectives: 1)

To analyze the factors influencing the implementation of digital transformation at PERUMDA Tirta Pakuan Bogor; 2) To formulate strategies for strengthening the implementation of digital transformation at PERUMDA Tirta Pakuan Bogor.

METHODS

The research was conducted in the PERUMDA Tirta Pakuan Bogor during the period of July to December 2024. The types of data used in this research consist of both primary and secondary data. Primary data were collected directly from the research subjects or objects through several means. Firstly, primary data were obtained through a survey method using an online questionnaire distributed via Google Forms, targeting 200 respondents out of 451 employees of PERUMDA Tirta Pakuan Bogor. Secondly, primary data were also collected through in-depth interviews with experts to develop a hierarchy and determine the weights of each criterion using the Analytical Hierarchy Process (AHP), with the aim of mapping strategic priorities to strengthen the implementation of digital transformation undertaken by PERUMDA Tirta Pakuan Bogor. Meanwhile, secondary data were gathered through an extensive literature review and the examination of relevant documents, including internal data from PERUMDA Tirta Pakuan Bogor, scholarly publications, and other supporting literature relevant to the research context.

The sampling technique used in this study is non-probability sampling, selected based on specific considerations. In this research, the key consideration for respondent selection was their direct involvement in the implementation of digital transformation within the company. According to Hair et al. (2017), the minimum sample size for Partial Least Squares (PLS) analysis is 5 to 10 times the largest number of formative indicators used to measure a single construct. In this study, the model comprises 18 indicators, thus requiring a minimum of 180 respondents (10×18). A total of 200 respondents were selected from the 451 employees of PERUMDA Tirta Pakuan Bogor to ensure data stability and to allow for the replacement of any incomplete or inconsistent responses.

In addition to survey respondents, this study involved expert respondents for the Analytical Hierarchy Process (AHP) analysis to determine strategic priorities for strengthening digital transformation

implementation. Based on Saaty (2012), the minimum number of respondents for AHP is two experts. This study involved four experts, comprising the President Director, Technical Director, General Director, and Consultant Project Manager, all of whom held strategic roles in the company's digital transformation efforts.

This study employs the Structural Equation Modeling Partial Least Squares (SEM-PLS) method to test the hypotheses and Analytical Hierarchy Process (AHP).

Relationship between Leadership and Digital Transformation Acceptance Attitude (H1)

Leadership plays a central role in shaping employees' attitudes toward change, especially in the context of digital transformation. Effective leadership can foster acceptance by promoting trust, providing guidance, and supporting innovation (Yukl, 2013; Avolio & Bass, 2016). Based on these insights, we hypothesize:

H₀₁: Leadership does not significantly influence Digital Transformation Acceptance Attitude.

H_{a1}: Leadership significantly influences Digital Transformation Acceptance Attitude.

Relationship between Leadership and Digital Transformation Implementation (H2)

Leadership effectiveness is widely recognized as a crucial factor in the successful implementation of organizational change, including digital initiatives (Al-Haddad & Kotnour, 2015). Based on this, we hypothesize:

H₀₂: Leadership does not significantly influence Digital Transformation Implementation.

H_{a2}: Leadership significantly influences Digital Transformation Implementation.

Relationship between Organizational Culture and Digital Transformation Acceptance Attitude (H3)

Organizational culture that supports innovation and learning is often associated with greater employee receptivity toward digital change (Cameron & Quinn, 2011). Based on this, we hypothesize:

H₀₃: Organizational culture does not significantly influence Digital Transformation Acceptance Attitude.

H_{a3}: Organizational culture significantly influences Digital Transformation Acceptance Attitude.

Relationship between Organizational Culture and Digital Transformation Implementation (H4)

An adaptive and supportive culture is essential for implementing digital strategies effectively (Kane et al. 2015). Based on this, we hypothesize:

H₀₄: Organizational culture does not significantly influence Digital Transformation Implementation.

H_{a4}: Organizational culture significantly influences Digital Transformation Implementation.

Relationship between Resources and Digital Transformation Acceptance Attitude (H5)

The availability of sufficient resources, including skilled personnel, financial support, and infrastructure, enhances employees' readiness to embrace digital change (Vial, 2019). Based on this, we hypothesize:

H₀₅: Resources do not significantly influence Digital Transformation Acceptance Attitude.

H_{a5}: Resources significantly influence Digital Transformation Acceptance Attitude.

Relationship between Resources and Digital Transformation Implementation (H6)

The implementation of digital transformation heavily depends on the adequacy of resources that support technological adaptation (Susanti et al. 2023). Based on this, we hypothesize:

H₀₆: Resources do not significantly influence Digital Transformation Implementation.

H_{a6}: Resources significantly influence Digital Transformation Implementation.

Relationship between Technology and Digital Transformation Acceptance Attitude (H7)

Perceived usefulness and ease of use of technology can positively affect employees' acceptance of digital initiatives (Davis, 1989; Venkatesh et al. 2012). Based on this, we hypothesize:

H₀₇: Technology does not significantly influence Digital Transformation Acceptance Attitude.

H_{a7}: Technology significantly influences Digital Transformation Acceptance Attitude.

Relationship between Technology and Digital Transformation Implementation (H8)

Technological readiness is often cited as a driver of

successful digital transformation in organizations (Westerman et al. 2014). Based on this, we hypothesize:

H₀₈: Technology does not significantly influence Digital Transformation Implementation.

H_{a8}: Technology significantly influences Digital Transformation Implementation.

Relationship between Digital Transformation Acceptance Attitude and Digital Transformation Implementation (H9)

Positive attitudes toward digital transformation among employees have been shown to facilitate its effective implementation (Alos-Simo et al. 2021). Based on this, we hypothesize:

H₀₉: Digital Transformation Acceptance Attitude does not significantly influence Digital Transformation Implementation.

H_{a9}: Digital Transformation Acceptance Attitude significantly influences Digital Transformation Implementation.

The Mediating Role of Digital Transformation Acceptance Attitude in the Relationship between Leadership and Digital Transformation Implementation (H10)

Leadership is expected to influence digital transformation implementation both directly and indirectly through its effect on employees' acceptance of digital changes (Nguyen et al. 2020). Based on this, we hypothesize:

H₀₁₀: Digital Transformation Acceptance Attitude does not mediate the relationship between Leadership and Digital Transformation Implementation.

H_{a10}: Digital Transformation Acceptance Attitude mediates the relationship between Leadership and Digital Transformation Implementation.

The Mediating Role of Digital Transformation Acceptance Attitude in the Relationship between Organizational Culture and Digital Transformation Implementation (H11)

Organizational culture indirectly influences digital transformation by shaping attitudes toward technological change (Cameron & Quinn, 2011). Based on this, we hypothesize:

H₀₁₁: Digital Transformation Acceptance Attitude does not mediate the relationship between Organizational Culture and Digital Transformation Implementation.

H_{a11}: Digital Transformation Acceptance Attitude mediates the relationship between Organizational Culture and Digital Transformation Implementation.

The Mediating Role of Digital Transformation Acceptance Attitude in the Relationship between Resources and Digital Transformation Implementation (H12)

Resources can affect the success of digital transformation through their influence on employee acceptance of digital tools and practices (Vial, 2019). Based on this, we hypothesize:

H₀₁₂: Digital Transformation Acceptance Attitude does not mediate the relationship between Resources and Digital Transformation Implementation.

H_{a12}: Digital Transformation Acceptance Attitude mediates the relationship between Resources and Digital Transformation Implementation.

The Mediating Role of Digital Transformation Acceptance Attitude in the Relationship between Technology and Digital Transformation Implementation (H13)

Technological factors influence implementation success through their impact on user acceptance and perceived benefits (Venkatesh et al. 2012). Based on this, we hypothesize:

H₀₁₃: Digital Transformation Acceptance Attitude does not mediate the relationship between Technology and Digital Transformation Implementation.

H_{a13}: Digital Transformation Acceptance Attitude mediates the relationship between Technology and Digital Transformation Implementation.

Figure 1 illustrates the conceptual framework of this study, which investigates the influence of four independent variables leadership (KP), organizational culture (BO), resources (SD), and technology (TK) on the implementation of digital transformation (ID), with digital transformation acceptance attitude (DA) acting as a mediating variable.

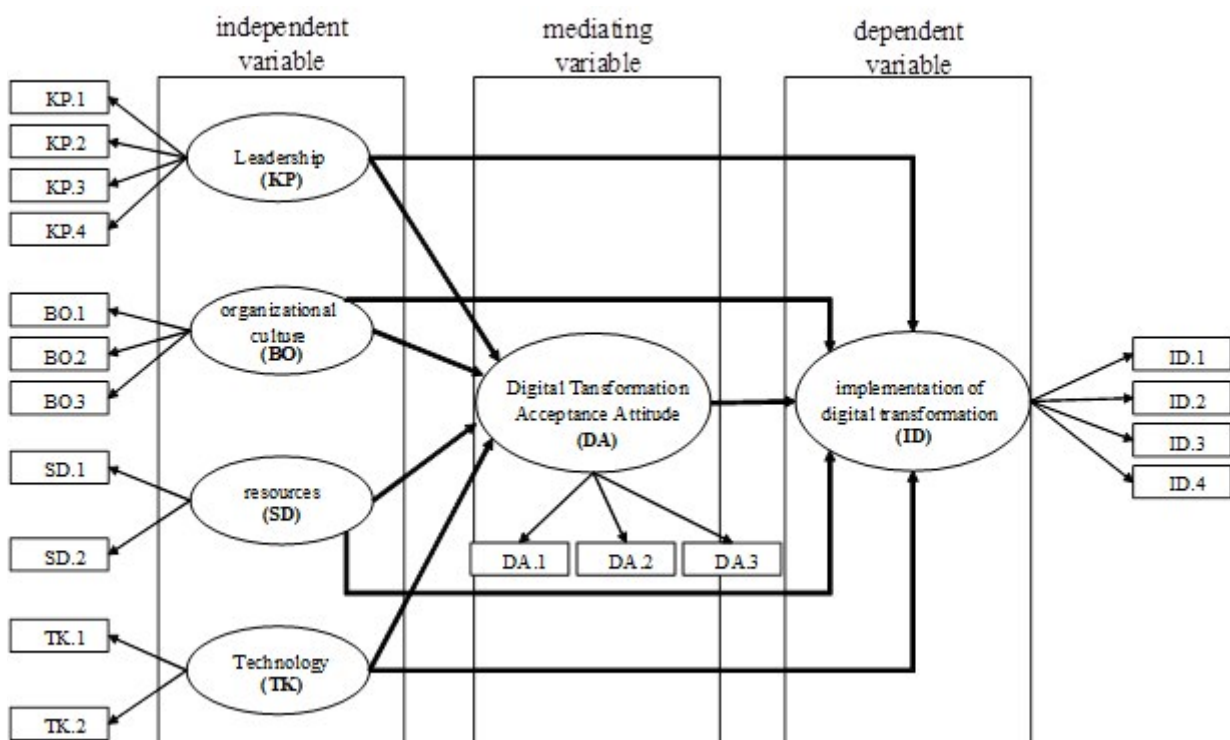


Figure 1. The conceptual framework of this study, which investigates the influence of four independent variables Leadership (KP), Organizational Culture (BO), Resources (SD), and Technology (TK) on the Implementation of Digital Transformation (ID), with Digital Transformation Acceptance Attitude (DA) acting as a mediating variable.

RESULTS

The respondents in this study were divided into two groups. The first group consisted of employees of PERUMDA Tirta Pakuan Bogor who utilized digital technology in their work. This group was selected to identify the key factors influencing the implementation of digital transformation within the organization. A total of 451 questionnaires were distributed via Google Forms to all employees, with 200 valid responses collected. The majority of respondents were staff-level employees, accounting for 179 individuals (89.5 percent), and most were from the Production Department (87 respondents or 43.5 percent), followed by the Customer Service and Public Relations Department (42 respondents or 21 percent). The second group comprised expert respondents who were involved in formulating strategies to strengthen the implementation of digital transformation. These respondents provided qualitative insights essential for developing strategic recommendations. In total, four expert respondents participated, consisting of three internal stakeholders and one external expert. The internal experts included the President Director, Technical Director, and General Affairs Director of PERUMDA Tirta Pakuan Bogor.

The external expert respondent was a professional IT consultant with extensive experience guiding digital transformation processes across various regional water utility companies (PDAMs) in Indonesia. This external perspective enriched the study by providing an objective and broader understanding of the challenges and opportunities of digital transformation outside the organization. The combination of internal managerial insights and external expertise ensured a comprehensive analysis of the factors and strategies relevant to successful digital transformation at PERUMDA Tirta Pakuan, Bogor.

Outer Model Evaluation – Average Variance Extracted

According to Hair et al. (2014), outer model evaluation refers to the assessment of the measurement model in structural equation modeling (SEM), particularly in Partial Least Squares (PLS-SEM). This process is

crucial for ensuring that the constructs in the model are measured reliably and validly. One of the key indicators used in evaluating convergent validity within the outer model is the average variance extracted (AVE). Based on Chin and Dibbern (2010), a construct's AVE value must exceed 0.5 to be considered valid. All constructs in this study had AVE values above 0.5, indicating that all variables met the validity criteria (Table 1).

Inner Model Evaluation– Hypothesis Testing

According to Hair et al. (2014), inner model evaluation refers to the assessment of the structural model that examines the relationships between latent constructs hypothesized in the research model. This stage focuses on evaluating the model's predictive capabilities and the strength, direction, and significance of hypothesized paths. The goal was to determine whether the theoretical relationships proposed in the hypotheses were supported by empirical data.

Direct Effect

The first hypothesis posits that leadership has a positive influence on digital transformation acceptance attitude. The analysis supports this hypothesis, as evidenced by a path coefficient of 0.209 and a p-value of 0.002 (Table 2). This indicates that effective leadership characterized by visionary direction and top management support significantly shapes employees' willingness to embrace digital transformation initiatives. This finding aligns with the prior research by Sunaryo (2021), which demonstrated that leadership style positively impacts employee motivation, a critical factor in digital transformation acceptance. In contrast, the second hypothesis, which stated that leadership directly affects digital transformation implementation, was not supported (path coefficient = 0.023, p-value = 0.739) (Table 2), and thus rejected. This suggests that leadership alone may not directly ensure successful implementation unless complemented by other enablers such as infrastructure, systems, or employee preparedness. This result is consistent with Kotter's (1996) argument that leadership offers vision but must be operationalized through systems and active engagement.

Table 1. Values of average variance extracted (AVE)

Variabel	AVE
Organizational Culture	0.606
Digital Transformation Acceptance Attitude	0.691
Digital Transformation Implementation	0.697
Leadership	0.618
Resources	0.640
Technology	0.742

Table 2. Hypothesis testing

Relationship	Path Coefficient	P-Value	Result
Direct Effects			
Leadership → Digital Transformation Acceptance Attitude	0.209	0.002	Hypothesis Accepted
Leadership → Digital Transformation Implementation	0.023	0.739	Hypothesis Rejected
Organizational Culture → Digital Transformation Acceptance Attitude	0.390	0.000	Hypothesis Accepted
Organizational Culture → Digital Transformation Implementation	0.190	0.021	Hypothesis Accepted
Resources → Digital Transformation Acceptance Attitude	0.157	0.021	Hypothesis Accepted
Resources → Digital Transformation Implementation	0.255	0.001	Hypothesis Accepted
Technology → Digital Transformation Acceptance Attitude	0.018	0.810	Hypothesis Rejected
Technology → Digital Transformation Implementation	0.208	0.009	Hypothesis Accepted
Digital Transformation Acceptance Attitude → Digital Transformation Implementation	0.167	0.016	Hypothesis Accepted
Indirect Effects (via Digital Transformation Acceptance Attitude)			
Leadership → Digital Transformation Acceptance Attitude → Digital Transformation Implementation	0.035	0.062	Hypothesis Rejected
Organizational Culture → Digital Transformation Acceptance Attitude → Digital Transformation Implementation	0.065	0.033	Hypothesis Accepted
Resources → Digital Transformation Acceptance Attitude → Digital Transformation Implementation	0.026	0.113	Hypothesis Rejected
Technology → Digital Transformation Acceptance Attitude → Digital Transformation Implementation	0.003	0.828	Hypothesis Rejected

The third and fourth hypotheses proposed that organizational culture influences both digital transformation acceptance attitude and implementation. These hypotheses were supported, with path coefficients of 0.390 ($p = 0.000$) and 0.190 ($p = 0.021$), respectively (Table 2). These findings imply that a supportive and adaptive organizational culture enhances openness to change and facilitates the smooth execution of transformation initiatives. This is in line with the conclusions of Mahmud and Tesniwati (2023), who emphasized culture as a key enabler of organizational change. The fifth and sixth hypotheses examined the role of organizational resources. The results revealed significant positive effects on both acceptance attitude (path coefficient = 0.157, $p = 0.021$) and implementation (path coefficient = 0.255, $p = 0.001$) (Table 2).

The seventh hypothesis, which posited that technology influences digital transformation acceptance attitude, was not supported (path coefficient = 0.018, $p = 0.810$) (Table 2). This suggests that the mere availability of technology does not significantly affect employee attitudes unless it is paired with factors such as usability, relevance, and training. Nevertheless, the eighth hypothesis was accepted, showing a significant effect of technology on digital transformation implementation (path coefficient = 0.208, $p = 0.009$) (Table 2). This highlights that while technology may not directly shape attitudes, it plays a critical role in the execution phase, supporting its role as an operational enabler of change. Finally, the ninth hypothesis examined the impact of digital transformation acceptance attitude on implementation. This hypothesis was accepted (path

coefficient = 0.167, $p = 0.016$) (Table 2), affirming that positive employee attitudes toward digital transformation significantly contribute to its successful implementation. This finding is consistent with the Theory of Planned Behavior (Ajzen, 1991), which emphasizes the role of individual intentions in guiding behaviors.

Indirect Effects

The indirect effect analysis revealed that the indirect relationship between leadership and digital transformation implementation via acceptance attitude was not significant (path coefficient = 0.035, $p = 0.062$) (Table 2). This suggests that while leadership influences acceptance attitude, it does not significantly translate into implementation outcomes through this pathway alone. This may be due to the intervening factors not captured in the model. In contrast, the indirect effect of organizational culture on implementation through acceptance attitude was significant (path coefficient = 0.065, $p = 0.033$) (Table 2). This finding indicates that a strong and adaptive culture not only directly affects

implementation but also indirectly enhances it by shaping employees' positive attitudes and reinforcing the dual pathway of influence.

The indirect effect of resources on implementation via acceptance attitude was not statistically significant (path coefficient = 0.026, $p = 0.113$), suggesting that resources might have a more direct rather than mediated impact. Similarly, technology's indirect effect through acceptance attitude was not significant (path coefficient = 0.003, $p = 0.828$), reinforcing the view that technology's role in transformation is more operational than attitudinal (Table 2).

Analytical Hierarchy Process (AHP) Hierarchical Structure

The data collected from the experts was subsequently analyzed using the Expert Choice application. Figure 2 illustrates the AHP hierarchical framework with two main areas of focus: (1) analysis of goal criteria in relation to the focus and (2) analysis of strategic alternatives in relation to the focus.

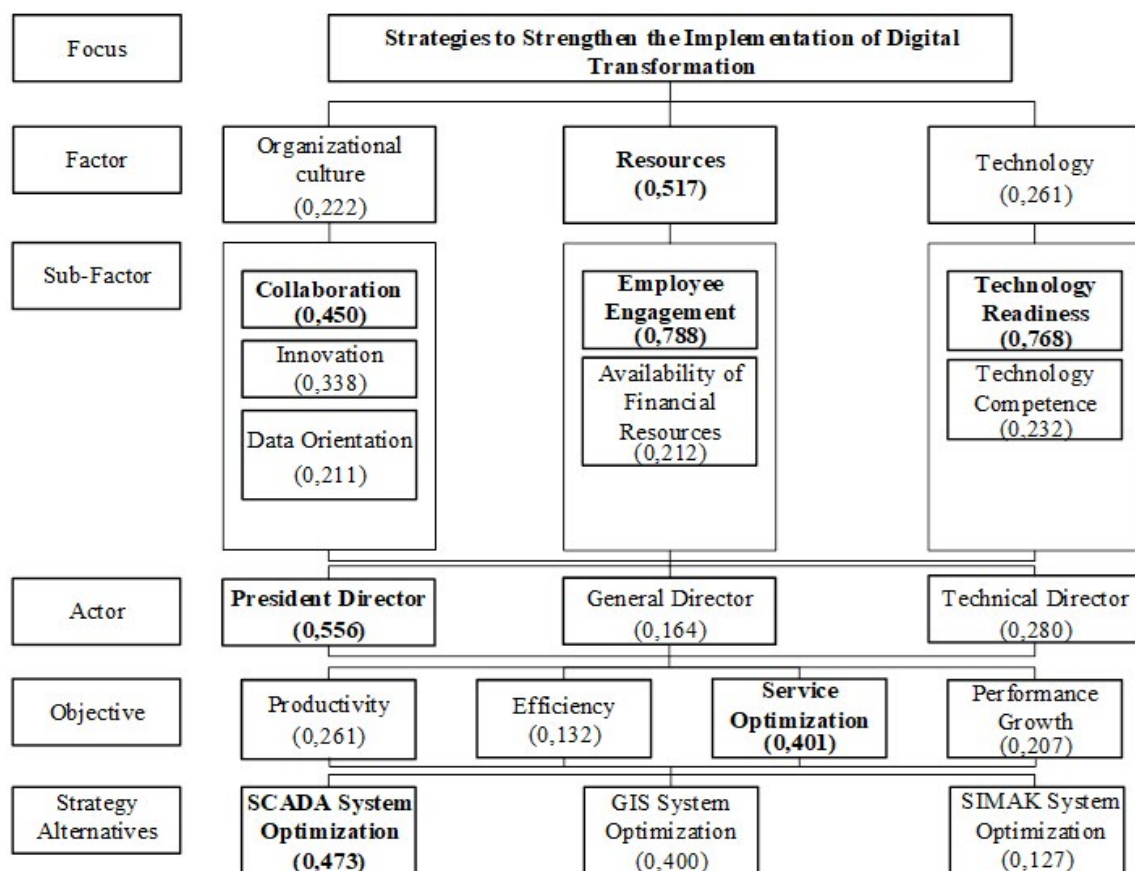


Figure 2. The AHP Hierarchical Framework, with two main areas of focus: (1) analysis of goal criteria in relation to the focus, and (2) analysis of strategic alternatives in relation to the focus

Analysis of Goal Criteria in Relation to the Focus

Based on the analysis results (Tabel 3), service optimization was identified as the top-priority goal in the implementation of digital transformation at PERUMDA Tirta Pakuan, Bogor, with the highest weight of 0.401. This indicates that the company prioritizes the improvement of customer service quality as the central focus of its digital transformation process. This prioritization is reasonable, considering that PERUMDA Tirta Pakuan is a municipally owned enterprise tasked primarily with providing and fulfilling the clean water needs of the people of Bogor. The company's digital transformation is expected to accelerate service processes, enhance transparency, and offer customers greater accessibility leading to more adaptive, responsive, and sustainable service delivery.

Analysis of Strategic Alternatives Related to the Focus

Based on the analysis, SCADA system optimization emerged as the top strategic priority in supporting digital transformation at PERUMDA Tirta Pakuan, with the highest weight of 0.473. This system enables real-time monitoring and control of the entire water management process, from production to distribution. The strategy involves not only investing in SCADA infrastructure but also preparing human resources to operate the system effectively. By doing so, the company aims to improve productivity, efficiency, service quality, and overall performance in a sustainable manner. GIS system optimization was the second priority with a weight of 0.400, playing a crucial role in mapping distribution networks, customer complaints, and pipeline leaks. GIS enhances both customer service and technical operations by enabling faster complaint handling and facilitating hydraulic analyses. Its effectiveness is further increased when integrated with SCADA data

for real-time analysis. Meanwhile, SIMAK system optimization ranks third (0.127), focusing on digitizing administrative processes to reduce paper usage and improve internal workflow efficiency.

Managerial Implications

Based on the research findings, several managerial implications are proposed to support digital transformation at PERUMDA Tirta Pakuan. For the SCADA system, management is encouraged to strengthen cross-functional collaboration by establishing integrated teams that include operations, IT, and strategic management units. Fostering a culture of innovation and promoting data-driven decision-making are essential, with SCADA integrated into performance monitoring and reporting processes. Active employee involvement from planning to evaluation stages is critical to building ownership and accountability. Strategic financial planning and technological readiness, including regular audits and a phased implementation approach, are also necessary to ensure sustainable system optimization.

In terms of the GIS system, collaboration across departments especially between technical, operational, and IT units is vital to ensure that spatial data accurately reflect infrastructure conditions and support informed decision-making. Encouraging innovation, supporting continuous learning, and using spatial data for technical planning and asset management will maximize GIS potential. Employee participation in data updating and verification processes must be prioritized to maintain data quality, supported by investments in hardware, software, training, and cloud-based infrastructure. A structured, gradual implementation approach with accessible operational guidelines is recommended to support effective system use.

Tabel 3. Weights and priorities of goal criteria related to the focus

Goal Criteria	Weight	Priority
Service Optimization	0.401	1
Productivity	0.261	2
Performance Growth	0.207	3
Efficiency	0.132	4

Regarding the SIMAK system, management should promote active participation from all work units through interdepartmental coordination and the formation of support teams to guide the transition from manual to digital processes. Strengthening a culture of innovation and encouraging employees to contribute ideas for system improvements are important steps. SIMAK should be positioned as a reliable administrative information source, requiring consistent use and regular data updates. Increasing adoption can be achieved through extensive socialization, ongoing training, performance-based incentives, and user-friendly system design. Additionally, ensuring adequate digital infrastructure and technical support is key to long-term success, enabling SIMAK to serve as the foundation for efficient, transparent, and integrated digital bureaucracy within the organization.

CONCLUSION AND RECOMMENDATIONS

Conclusions

Based on the results of the SEM-PLS analysis, it was found that three out of the four examined factors organizational culture, resources, and technology have a direct and significant influence on the implementation of digital transformation at PERUMDA Tirta Pakuan Bogor. These three factors play a vital role in supporting the success of digital transformation, whereas leadership was found to have no significant impact, either directly or indirectly, through the mediating variable of digital transformation acceptance attitude. In the analysis of indirect effects, only organizational culture showed a significant positive influence on implementation through acceptance attitude. Consequently, the leadership factor was excluded as a criterion in the formulation of alternative strategies using the Analytic Hierarchy Process (AHP) due to its lack of significance in this study's model.

The strategy formulation using the Analytic Hierarchy Process (AHP) identified resources as the top priority for strengthening the implementation of digital transformation. Actor mapping analysis highlighted the managing director as the key strategic figure in ensuring the success of this initiative. The most prioritized strategic objective was service optimization. Therefore, the most recommended strategy to reinforce digital transformation implementation at PERUMDA Tirta Pakuan Bogor is the optimization of the Supervisory

Control and Data Acquisition (SCADA) system, as it is considered capable of enhancing productivity, efficiency, service quality, and overall performance.

Recommendations

To enhance the effectiveness of SCADA system optimization, securing a strong commitment from top management is crucial. This commitment should extend beyond financial investment to include the development of employee competencies and cultivation of awareness across all organizational levels. Leveraging this technology effectively can significantly contribute to improved service quality for customers, enhanced productivity, accelerated performance growth, and greater organizational efficiency.

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