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Analysis of Digital Transformation and Digital Leadership in Improving Employee Performance at Sekolah Tinggi Ilmu Ekonomi (STIE) APRIN Palembang

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Abstract
This study employs a quantitative approach to analyze the influence of Digital Transformation and Digital Leadership on Employee Performance at STIE APRIN. The research population consists of 40 employees; due to the relatively small size, a saturated sampling technique was used, meaning the entire population was included as the research sample. The research instrument was a structured questionnaire developed based on theoretical indicators of each variable.
Prior to analysis, the instrument's quality was evaluated through validity testing (using Pearson correlation) and reliability testing using Cronbach's Alpha, where items were considered valid if r calculated > r table and reliable if $\alpha \geq 0.60$. Data normality was tested using the Kolmogorov–Smirnov test to ensure a normal distribution, and multicollinearity was assessed via Tolerance and Variance Inflation Factor (VIF) values (with thresholds: Tolerance > 0.10 and VIF < 10) to ensure no strong intercorrelation among independent variables.
Relationships among variables were analyzed using multiple linear regression analysis. The model's explanatory power was measured through the coefficient of determination (R^2), while the F-test was applied to examine the simultaneous effect of independent variables on the dependent variable. To determine the individual influence of each independent variable, partial t-tests were conducted. All data analyses were performed using SPSS version 24, with a significance level set at 5%.
This methodological approach ensures that the research instrument is both valid and reliable, that classical assumptions are met, and that the statistical tests provide credible empirical evidence regarding the extent to which Digital Transformation and Digital Leadership impact employee performance.

Keywords: Digital Transformation, Digital Leadership, Employee Performance, Human Resource Management

A. INTRODUCTION

The rapid development of digital technology over the past decade has had a significant impact across various sectors, including higher education. Digital transformation is no longer an option, but a necessity for educational institutions to remain relevant and competitive in facing the era of the Industrial Revolution 4.0 and Society 5.0. Digitalization in educational institutions covers various aspects, ranging from administrative systems, learning processes, data management, to human resource governance. The effective implementation of digital technology is believed to enhance operational efficiency, service quality, and the productivity of employees and lecturers. In this context, Sekolah Tinggi Ilmu Ekonomi (STIE) APRIN Palembang, as a private higher education institution, is also required to adopt and adapt comprehensively to the dynamics of digital transformation (Prasetyo et al., 2020).

However, digital transformation will not run effectively without leadership that drives change and innovation. The concept of *digital leadership* emerges as a new form of leadership that not only masters technology but also holds a strategic vision to integrate it into managerial processes and organizational culture. Digital leadership becomes crucial in creating a work environment that is adaptive, innovative, and performance-oriented. Digital leaders are expected to become agents of change, guiding their teams in utilizing technology, and creating added value through the digitalization of work processes. Therefore, the success of digital transformation within an institution greatly depends on the consistent and inclusive implementation of digital leadership at all organizational levels (Tambunan, 2023).

Employee performance, as a key indicator of institutional success, is greatly influenced by how organizations manage digital-based changes. Employees who are able to adapt to digital work systems, utilize technology in daily tasks, and receive strong support from digital leadership tend to show improvements in productivity, efficiency, and work quality. However, without appropriate strategy and leadership, digitalization may instead cause resistance and decreased work morale. Hence, it is essential for higher education institutions to design HR management approaches aligned with digital transformation agendas, ensuring that the changes are not merely structural but also touch on behavioral and cultural aspects of the organization (Setiawan et al., 2020).

This research was conducted at STIE APRIN Palembang, a higher education institution currently strengthening its governance through the adoption of digital technology and enhanced leadership capacity. The study aims to analyze the influence of digital transformation and digital leadership on employee performance. By examining the relationship between these two variables empirically, this study is expected to contribute both theoretically and practically to the development of HR management and digital transformation strategies in higher education, particularly within the context of private institutions adapting to the digital era (Syahrul, 2020).

LITERATURE REVIEW

Digital Transformation

Digital transformation is a strategic process undertaken by organizations to integrate digital technologies into all aspects of business, work systems, and organizational culture to

increase value, efficiency, and competitiveness. According to Westerman et al. (2018), digital transformation is not merely about using information technology but entails a comprehensive change process covering technological, organizational, and leadership dimensions.

In the context of higher education institutions, digital transformation includes academic system digitization, online learning, electronic administrative services, and information system-based human resource management. This process aims to achieve work efficiency, data transparency, and adaptive educational services in response to changing times. Nugroho and Pramudibyanto (2020) state that higher education institutions that successfully transform digitally will be more responsive in facing the challenges of the Industrial Revolution 4.0 and the Society 5.0 era.

Furthermore, Wahyuni and Ramadhani (2021) highlight three main aspects that determine the success of digital transformation in higher education: (1) readiness of technology infrastructure, (2) digital literacy among faculty and staff, and (3) support from visionary and innovative leadership. These three aspects are interconnected and form a healthy digital ecosystem.

Meanwhile, Lestari and Hasanah (2021) emphasize that digital transformation must be accompanied by the upskilling and reskilling of human resources to optimize adaptation to change. They found that digitalization failures are often not due to technology itself, but to employee resistance and a lack of adequate training.

Digital Leadership

Digital leadership is a leadership concept that has emerged alongside the development of information and communication technologies, which have significantly transformed how organizations operate. Digital leadership goes beyond mere technical proficiency—it refers to a leader's ability to guide an organization through effective, innovative, and sustainable digital transformation (Kane et al., 2019). Digital leadership is closely linked to human resource development. According to Rakhman and Yusuf (2021), a digital leader must be able to develop employees' digital competencies through training and by providing space for innovative exploration. A leadership style that supports digitalization encourages employees to feel more confident in using technology, thereby positively impacting their performance. Tambunan (2023) also notes that digital leadership fosters a work climate that supports a learning culture and continuous innovation.

In educational institutions such as universities, digital leadership plays a strategic role in accelerating institutional digital transformation. Wahyuni and Ramadhani (2021) emphasize the need for digital leadership in adapting learning systems, administration, and student services to technological platforms. Leaders in higher education must be capable of holistically integrating technology to improve managerial efficiency and academic quality. Without strong digital-based leadership, technological transformation often encounters resistance from stakeholders.

Thus, digital leadership is a key factor in driving organizational change that is adaptive, innovative, and technology-oriented. The role of a digital leader extends beyond being a

technocrat—they must act as a visionary and as a catalyst for digital organizational culture. Therefore, within the framework of this study, digital leadership is positioned as a variable that directly influences the effectiveness of digital transformation and employee performance.

Employee Performance

According to Robbins and Judge (2019), employee performance is influenced by various factors such as motivation, ability, leadership, and the work environment. In today's digital era, adaptability to technology and changes in work systems is a new determinant of performance improvement.Several studies emphasize the importance of human resource management approaches that focus on competency development, strengthening a collaborative work culture, and providing technology-based work facilities. Permatasari and Widodo (2021) found that improving employee performance is strongly influenced by digital competency training and supportive transformational leadership. Additionally, a work environment that encourages innovation and learning is an important factor that drives employees to achieve optimal performance (Utami & Fauzan, 2024).

Employee performance in higher education institutions has unique characteristics, encompassing administrative, academic, and student service aspects. Lestari and Hasanah (2021) state that higher education employees are expected to multitask, be time-disciplined, and remain responsive to the development of information technology. This requires human resource management to focus not only on achieving work targets but also on continuous personal development. Furthermore, the Goal-Setting Theory by Locke and Latham (2019) explains that performance improves when employees have clear, challenging goals supported by constructive feedback. On the other hand, the Resource-Based View (RBV) in strategic management suggests that employees with unique skills—including digital competencies and innovative capabilities—constitute a source of organizational competitive advantage (Barney & Hesterly, 2020).

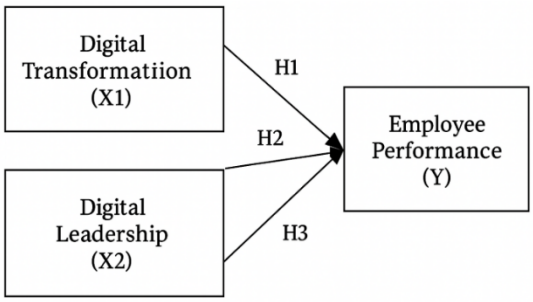
B. METHODS

This study employs a quantitative approach with a population of 40 employees at the Sekolah Tinggi Ilmu Ekonomi (STIE) APRIN Palembang. Given the relatively small population size, a saturated sampling technique was used, in which all members of the population were included as research samples. Several statistical analysis techniques were applied to examine the collected data.

The tests used include a validity test to assess the appropriateness of the questionnaire items, and a reliability test using Cronbach’s Alpha to evaluate the internal consistency of the research instrument. A normality test was conducted using the Kolmogorov-Smirnov method to ensure the data were normally distributed. A multicollinearity test was also performed by examining the Tolerance and Variance Inflation Factor (VIF) values to confirm the absence of correlations among the independent variables.

To determine the extent of the contribution of the independent variables to the dependent variable, a coefficient of determination test (R Square) was used. Additionally, a simultaneous test (F-test) was conducted to assess the joint influence of the independent variables on the dependent variable, and a partial test (t-test) was carried out to evaluate the individual effect of each independent variable on employee performance.

Figure 1. Theoretical Framework



C. RESULTS AND DISCUSSION

Validity testing is used to determine whether the questions or statements in the distributed questionnaire are valid or not (Suwandita et al., 2023). The calculation is done by comparing the value of *r-count* with *r-table* at a significance level of 0.05 (5%). If the *r-count* is greater than *r-table* (*r-count* > *r-table*), the item is considered valid (Pratama et al., 2023). To determine whether the data obtained from the research can be used, the researcher conducted a validity test. Based on the results, all statement items in this study had a Pearson correlation value greater than 0.248, indicating they are valid

Table 1. Reliability Test Results

No	Variabel	Nilai Cronbach's Alpha	Kriteria Minimum	Kesimpulan
1	Transformasi Digital (X1)	0,777	0,60	Reliabel
2	Digital Leadership (X2)	0,860	0,60	Reliabel
3	Kinerja Karyawan (Y)	0,839	0,60	Reliabel

Source: SPSS 24 Data Analysis, 2023.

It can be seen that each variable — product diversity, price, customer satisfaction, and customer loyalty — has a Cronbach's Alpha value of ≥ 0.60. The result of the Kolmogorov-Smirnov test shows a significance value of 0.188 > 0.05, indicating that the research data are normally distributed, thus meeting the normality assumption in regression analysis.

Table 2. Multicollinearity Test

	Tolerance	VIF
(Constant)		
Transformasi Digital (X1)	0,450	1,188
Digital Leadership (X2)	0,450	1,188

Source: SPSS 24 Data Analysis, 2023

It is known that each variable has a Variance Inflation Factor (VIF) value below 10 and a tolerance value above 0.1. Therefore, it can be concluded that there is no multicollinearity between the variables Digital Transformation and Digital Leadership in this study.

Table 3. Results of R Square Determination Coefficient X1 – Y

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,870[a]	0,690	0,691	3,449

Source: SPSS 24 Data Analysis, 2023

Table 4. Results of R Square Determination Coefficient X2 - Y

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,752[a]	0,552	0,515	4,580

Source: SPSS 24 Data Analysis, 2023

Table 5. Results of Simultaneous R Square Determination Coefficient

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,82[a]	0,683	0,669	4,006

Source: SPSS 24 Data Analysis, 2023

Based on the table above, the coefficient of determination (R Square) is 0.683, which means that the variables Digital Transformation (X1) and Transformational Leadership (X2) simultaneously influence Performance (Y).

Table 6. Simultaneous Test Results (F)

Source of Variation	Sum of Squares	Free Degree (df)	Mean Square	F Count	Sig.
Regretion	1.432,218	2	716,109	42,784	0,000[b]
Residual	786,452	47	16,730		

Source of Variation	Sum of Squares	Free Degree (df)	Mean Square	F Count	Sig.
Total	2.218,670	49			

Source: Primary data analysis, 2023

Notes:
a. Dependent variable: Employee Performance (Y)

b. Independent variables: Digital Transformation (X1), Digital Leadership (X2)

Based on Table 6, the calculated F-value is 42.784, while the F-table value at a 5% significance level ($\alpha = 0.05$) with df1 = 2 and df2 = 47 is approximately 3.20. Since the F-value (42.784) is greater than the F-table (3.20), and the significance value is 0.000 < 0.05, this indicates that the regression model is simultaneously significant.

Table 7. t-Test Results (Partial Significance)

Variable	B (Coefficient)	Std. Error	Beta (Standardized)	t Count	Sig.
(Constanta)	4,215	2,978	—	1,415	0,164
Digital Transformation (X1)	0,534	0,127	0,518	4,205	0,000
Digital Leadership (X2)	0,298	0,085	0,387	3,506	0,001

Source: SPSS Analysis Results, 2023

Interpretation of t-Test Results:

Based on the results in Table 7, the following information is obtained:

1. **Digital Transformation (X1)** shows a t-count value of **4.205** with a significance value of **0.000**. Since *t-count* > *t-table* (4.205 > 2.013) and *sig.* < *0.05*, **H_0 is rejected** and **H_a is accepted**. This means that **Digital Transformation has a significant partial effect on Employee Performance**.
2. **Digital Leadership (X2)** has a t-count value of **3.506** with a significance level of **0.001**, which also meets the significance criteria (*t-count* > *t-table* and *sig.* < *0.05*). Thus, **Digital Leadership also has a significant partial effect on Employee Performance**.

3. The **constant value of 4.215** indicates that if both independent variables have no effect, the baseline value of Employee Performance would be at this level.

Therefore, both **Digital Transformation** and **Digital Leadership** individually (partially) contribute positively and significantly to improving **Employee Performance**.

D. CONCLUSION

1. Validity and Reliability Tests show that all questionnaire items are valid, with Pearson correlation values above 0.248, and reliable, as the Cronbach's Alpha values for all variables exceed 0.60, namely:
   a) Digital Transformation (X1): 0.777
   b) Digital Leadership (X2): 0.860
   c) Employee Performance (Y): 0.839
2. The data are considered normally distributed, based on the Kolmogorov-Smirnov test result with a significance value of 0.188 > 0.05.
3. There is no multicollinearity problem in the regression model, as the VIF values for both independent variables are below 10 and the tolerance values are above 0.1.
4. The Determination Test indicates that:
   a) Digital Transformation (X1) contributes 69% to Employee Performance.
   b) Digital Leadership (X2) contributes 55.2% to Employee Performance.
   c) Simultaneously, both variables contribute 68.3% to the variation in Employee Performance ($R^2 = 0.683$).
5. The F-test (simultaneous test) shows that Digital Transformation and Digital Leadership jointly have a significant effect on Employee Performance (F-count = 42.784 > F-table = 3.20; sig. = 0.000 < 0.05).
6. The t-test (partial test) indicates that:
   a) Digital Transformation (X1) has a significant effect on Employee Performance (t-count = 4.205; sig. = 0.000).
   b) Digital Leadership (X2) also has a significant effect (t-count = 3.506; sig. = 0.001).

Recommendations

1. For Institutional Management

It is recommended that the institution or organization enhance the implementation of digital transformation, both in terms of infrastructure and digital work culture. Additionally, strengthening digital leadership styles is crucial in directing change and adaptation in the modern work environment.

2. For Employees

Improving digital literacy and readiness to face technology-based changes is necessary to support sustainable performance improvements in an increasingly dynamic work environment.

3. For Future Researchers

Future studies could broaden the scope of variables by including organizational culture, work motivation, or the influence of the external digital environment in the research model to gain a more comprehensive understanding of the factors affecting employee performance.

4. For Organizational Development

Performance improvement strategies should be formulated by integrating digital transformation policies and strengthening digital leadership as part of long-term human resource development planning.

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