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The Influence of Digital Culture and E-Leadership on Operational Performance through Digital Capability: A Study on Study Programs at XYZ University

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ABSTRACT

The aim of this study is to examine the effect of e-leadership and digital culture on operational performance through digital capability in study programs at XYZ University. Utilizing a quantitative approach with Partial Least Squares Structural Equation Modeling (PLS-SEM), 120 respondents who are heads of study programs, quality assurance coordinators, and administrative officers were targeted to collect data. The findings indicate that digital culture and e-leadership both directly impact operational performance, as well as digital capability. Digital capability also has a direct impact on operational performance. Digital capability partially mediates the relationship between digital culture and operational performance but does not significantly mediate the influence of e-leadership. Among all the measures, e-leadership has the strongest influence on operational performance. This study places the strategic role of leadership and digital values at the forefront as drivers of institutional performance and illustrates that the transforming capability dimension of digital capability is underdeveloped. Practical and theoretical implications for maximum digital transformation by higher education institutions through synergistic cultural and leadership approaches are presented by these results.

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1. INTRODUCTION

Digitalization is among the main drivers of changing the way organizations function and produce value, like in the education sector of higher education. Rapid growth in information technology requires universities to manage academic services in adaptive, combined, and digital-based modes. The value of the international digital education market, which is estimated to reach USD 66.7 billion in 2028, reflects the accelerated digitalization of the academic world (MarketsandMarkets, 2024). At the national level, more than 4,356 universities in Indonesia with nearly 10 million students (Abdul Haris, 2024) are pressed hard to digitalize to remain efficient and competitive. XYZ University, being one of the best private universities in Indonesia, has taken conscious efforts to implement several digital systems to assist in academic services and also in management.

The application of this technology is still, however, not up to the desired mark. Low system integration, high manual work processes, and low use of data in decision-making evidence this. Internal audit and observations of operational performance have identified numerous gaps, such as unstructured performance monitoring systems, infrequent documentation of meetings, and ad hoc student complaints systems. These findings indicate that the main issue is not technological, but rather with the institution's weak ability to absorb, configure, and convert technology into powerful and adaptable work processes.

In this sense, digital culture and e-leadership are two of the most important variables on which transformation success hangs. Digital culture is a reflection of values, norms, and attitudes towards work that facilitate receptivity to innovation and technology, while e-leadership is the ability of leaders to direct, align, and generate collective commitment through the use of technology [1], [2].

These are intellectual assets that have the potential to impact competitive advantage under strategic management. The theoretical models of the Resource-Based View [3] and Dynamic Capabilities [4] show how these asset resources (value, rarity, inimitability, and cohesion) build digital competences that become pillars of institutional performance during a disrupted era. However, existing research has primarily focused on the business and industry settings, while empirical research in the context of higher education, particularly research that examines the interaction between digital culture, digital leadership, digital capabilities, and operational performance, has been limited.

The issues of digitalization in schools are as complex as in other settings, even calling for an even more systemic approach due to the involvement of many actors and processes. Therefore, empirical mapping is necessary to measure the direct contribution of e-leadership and digital culture to the operational performance of study programs, with digital capabilities as a mediating factor to bridge the gap between institutional performance and technological infrastructure. There are two main novelties presented by this research, mainly.

First, the approach used integrates the RBV Theory and Dynamic Capabilities Theory realistically in the Indonesian higher education environment, a field that has not been researched considerably. Second, the current research empirically examines the mediating role of digital capabilities between digital culture and digital leadership on operation performance, which has not been conducted largely in previous literature. Based on academic programs, which serve as the operational front lines of universities, this study has also practical value for improving internal management at the tactical level. The objective of the study is to investigate the influence of e-leadership and digital culture on study program operational performance at XYZ University with digital capabilities as an intervening variable. The study will advance theoretical insights on the role of intangible assets in facilitating digital transformation and provide practical implications towards more adaptive, efficient, and data-driven management of schools.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Resource-Based View (RBV) and Dynamic Capabilities

Resource-Based View (RBV) theory implies that organization competitive advantage stems from the use of internal resources, which are valuable, rare, inimitable, and specific to the firm [3]. In higher education, the resources include intangible ones such as digital culture and e-leadership, which have strategic value in shaping long-term operational excellence. However, RBV has been criticized as too inflexible and non-adaptable to external environmental changes [5]. Therefore, the Dynamic Capabilities framework was developed to explain how firms can change themselves sustainably to technological and market pressures [4]. Dynamic capabilities possess three central dimensions,

whereby sensing (the ability for opportunity capture), seizing (opportunity utilization), and transforming (reorganizing organizational processes and structures) serve as a template for the understanding of how digital capabilities are made up and deliver institution performance [6].

2.2 *Digital Culture*

Digital culture is a set of values, behaviors, and work practices that facilitate the adoption of technology, innovation, and digital working [1]. On the university level, digital culture is directly related to technological literacy, digital ethics, cybersecurity, and experimentation courage in a digital workplace [7]. Digital culture is a firm foundation for establishing an agile, innovative, and flexible work environment [8].

H1: Digital culture has a positive effect on the performance of operating study programs.

H2: Digital culture has a positive effect on digital competences of study programs.

2.3 *E-Leadership*

E-Leadership is the ability of leaders to guide, synchronize, and create organizational commitment based on digital technology [2]. E-Leadership has three main dimensions that include direction, synchronization, and commitment that signify the strategic role of leaders in formulating a digital vision, integrating resources, and building a creative and collaborative work culture. Successful e-leaders are able to drive technology adoption, facilitate cross-unit collaboration, and improve organizational performance.

H3: E-leadership has a positive effect on the operational performance of study programs.

H4: E-leadership has a positive effect on the digital capabilities of study programs.

2.4 *Digital Capabilities*

Digital capabilities are employed in describing how an institution can strategically and adaptively apply technology to support organizational goals [9]. These competencies involve sensing capability (the ability to recognize technology trends), organizing capability (the ability to structure and coordinate resources), and changing capability (the ability to transform and innovate) [10]. These three are important in driving operating effectiveness and organizational agility in responding to change.

H5: The digital capabilities have positive impacts on study program operating performance.

2.5 *The Mediating Role of Digital Capabilities*

Building on the Dynamic Capabilities perspective, digital capabilities are also capable of functioning as a mediator of strategic resources (such as digital culture and e-leadership) to institutional performance outcomes [4], [9]. Digital capabilities enable organizations to convert cultural values and leadership into efficient, creative, and digitized work processes. Digital capabilities, therefore, may mediate between e-leadership and digital culture and operational performance.

H6: Digital capabilities mediate the relationship between digital culture and operational performance of study programs.

H7: Digital capabilities mediate the relationship between e-leadership and operational performance of study programs.

In addition to the individual impacts of single variables, it is equally important to study the collective impact of digital culture and e-leadership on operational performance. The combination of the two is reported to produce a synergistic effect on organizational efficiency, effectiveness, and adaptability.

H8: Digital culture and e-leadership have a combined positive effect on the operational performance of study programs.

3. RESEARCH METHODS

3.1 Approach

The research adopts a quantitative approach with a survey design whose purpose is to find a causal relationship among variables by using statistical analysis techniques. The research is explanatory and utilizes primary data collected through questionnaires that were given to the selected respondents of study courses in XYZ University.

3.2 Population and Sample

The target population is all study programs at XYZ University consisting of 40 study programs at undergraduate, master, and doctoral levels. The study unit is the study program with three respondents heads of study programs, quality assurance coordinators, and administrative officers totaling 120 respondents. Quota sampling technique is used to ensure proportional representation of every study unit.

3.3 Data Collection Techniques

The data were gathered via an online survey employing a 1–4 Likert scale with the lowest value being "strongly disagree" and the highest value being "strongly agree." The survey tool was created based on indicators derived from the literature and validated by a pre-test.

Table 1. Operational Variables

Variable	Dimension	Indicator	Source
Digital Culture	Digital Literacy	Utilization of digital applications; digital information supports work	[7]
	Digital Rights and Ethics	Application of digital ethics and policies; protection of data and devices	
	Digital Security	Awareness and application of digital security practices	
	Creativity in the Digital Environment	Idea development; innovative use of technology	
E-Leadership	Direction	Visionary leadership; data-based decision-making	[2]
	Alignment	Building digital ecosystems; organizational transformation	
	Commitment	Strengthening digital culture; digital HR development; engagement building	
Digital Capability	Sensing Capability	Detecting digital trends; designing digitization strategies	[9]
	Organizing Capability	Allocating resources; cross-functional collaboration	
	Transforming Capability	Innovating digital services; integrating work processes	
Operational Performance	Cost Efficiency	Minimization of operational costs	[9], [11]
	Service Quality Improvement	Enhancement of service quality	
	Service Speed	Acceleration of service delivery	
	Responsiveness to Change	Agility in responding to digital or environmental shifts	

3.4 Data Analysis Techniques

The SEM–PLS data analysis was conducted in two steps using SmartPLS 4 software: Outer Model Test and Inner Model Test. The Outer Model Test is employed to evaluate the validity and reliability of constructs using convergent validity (outer loading > 0.7 and AVE > 0.5), discriminant validity (Fornell-Larcker and HTMT), and construct reliability (CR > 0.7 and Cronbach's Alpha > 0.6). The results indicate all the

indicators to be reliable and valid (CR and Alpha > 0.8; HTMT < 0.85). The Inner Model Test assesses the cross-relations between constructs by the coefficient of determination ($R^2 = 0.612$), f^2 measure (E-Leadership as the highest), and positive and significant predictability (Q^2). Bootstrapping results confirmed that e-leadership and digital culture significantly contribute to performance at the operational level ($p < 0.05$), while digital capability is not significant as a mediator, although still making a positive contribution.

4. RESULTS AND DISCUSSION

4.1 Descriptive Statistics

Descriptive statistics were used to provide an overview of the nature of the respondents in this research work, which included 120 participants and was representative of 40 study programs in XYZ University. Respondents consisted of the heads of the study programs, quality assurance unit heads, and study program administrative staff who were selected proportionally using the quota sampling method. Respondent characteristics were analyzed based on five most important dimensions, i.e., gender, age, highest educational attainment, position, and length of service, the complete spread of which is presented in Table 2.

Table 2. Research Respondent Characteristics

Category	Sub-Category	Frequency (n)	Percent
Gender	Male	57	47.5%
	Female	63	52.5%
Age	< 25 years	2	1.7%
	25–44 years	65	54.2%
	45–64 years	48	40.0%
	≥ 65 years	5	4.2%
Highest Education	Senior High School/Vocational	3	2.5%
	Diploma	1	0.8%
	Bachelor's Degree (S1)	33	27.5%
	Master's Degree (S2)	51	42.5%
	Doctoral Degree (S3)	32	26.7%
Position	Head of Study Program	40	33.3%
	Head of Quality Assurance Unit	40	33.3%
	Administrative Staff	40	33.3%
Years of Service	< 5 years	41	34.2%
	5–14 years	49	40.8%
	15–29 years	19	15.8%
	≥ 30 years	11	9.2%

Source: Processed primary data (2025)

As per the above table, it is evident that the highest proportion of the respondents are female (52.5%), belong to the age group 25–44 years (54.2%), and hold a master's degree as their highest educational attainment (42.5%). The distribution of the positions is also even distributed among the three functional positions in the study program. On the side of work experience, the respondents are marked by the existence of those with a work experience ranging from 5–14 years (40.8%), indicating that most have medium work experience and are at their working ages. The distribution is comforting that the respondents involved have the representative capabilities in assessing the variables of digitalization, leadership, and operational aspects of the study program within University XYZ.

Descriptive statistics of variables were utilized to examine the perceptions

of the respondents for all variables in this study, namely, Digital Culture, E-Leadership, Digital Capabilities, and Operational Performance. Questioning was conducted on a 1–4 Likert having the following interpretation categories: 1.00–2.50 = Low; 2.51–3.50 = Moderate; and 3.51–5.00 = High. Based on the findings of the data analysis, average ratings of all dimensions and variables are presented in Table 3.

Table 3. Descriptive Statistics

Variable	Dimension	Average Score	Category
Digital Culture	Digital Literacy	3.5	Moderate
	Digital Rights and Ethics	3.3	Moderate
	Digital Security & Creativity	3.2	Moderate
Overall Average		**3.33**	**Moderate**
E-Leadership	Direction	3.4	Moderate
	Alignment	2.9	Moderate
	Commitment	3.3	Moderate
Overall Average		**3.20**	**Moderate**
Digital Capability	Sensing Capability	3.4	Moderate
	Organizing Capability	3.2	Moderate
	Transforming Capability	3.1	Moderate
Overall Average		**3.23**	**Moderate**
Operational Performance	Quality and Operational Efficiency	3.3 – 3.4	Moderate
Overall Average		**3.35**	**Moderate**

Source: Processed primary data (2025)

Descriptive statistics reveal that the four main variables in this research are all in the moderate range. The highest mean score was in the Digital Literacy domain (3.5), which implies that the respondents have a very good understanding of the usage of digital devices and applications. In contrast, the lowest-scoring dimension is Alignment in the variable E-Leadership (2.9), indicating that alignment among digital process units is still a problem that needs to be solved. Overall, these data indicate that the digitization of study programs has begun, but it needs to be further strengthened through strategies, synergy between units, and fostering a more adaptive and collaborative digital working culture.

4.2 Measurement (Outer) Model

Outer model testing was conducted to quantify the validity and reliability of the research construct through three types of tests, i.e., convergent validity, discriminant validity, and construct reliability. Convergent validity was ascertained through factor loadings (> 0.7) and Average Variance Extracted (AVE > 0.5), while construct reliability was ascertained through Cronbach's Alpha (CA > 0.6) and Composite Reliability (CR > 0.7). The tests were conducted with the help of SmartPLS 4 software.

Table 4. Measurement Model

Variabel	Code	Loading Factor	Cronbach's Alpha (CA)	Composite Reliability (CR)	AVE
Digital Culture	BD1	0.869	0.904	0.907	0.634
	BD2	0.785			
	BD3	0.752			
	BD4	0.801			
	BD5	0.779			
	BD6	0.778			
	BD7	0.806			

Variabel	Code	Loading Factor	Cronbach's Alpha (CA)	Composite Reliability (CR)	AVE
E-Leadership	EL1	0.812	0.926	0.929	0.658
	EL2	0.766			
	EL3	0.782			
	EL4	0.799			
	EL5	0.792			
	EL6	0.861			
	EL7	0.863			
	EL9	0.811			
Digital Capability	KD1	0.743	0.865	0.870	0.598
	KD3	0.808			
	KD4	0.747			
	KD5	0.703			
	KD6	0.834			
	KD7	0.798			
Operational Performance	KO1	0.809	0.872	0.879	0.664
	KO2	0.741			
	KO3	0.793			
	KO4	0.900			
	KO5	0.822			

Source: SmartPLS 4 output, processed data (2025)

From the above table, all of the measures have a loading factor value of > 0.7 and each construct has above the cut-point CA and CR values and AVE > 0.5, therefore it is reasonable to say that all constructs in this study are valid and reliable. As Table 4. indicates, the indicators always load invariably on constructs measured, for example, indicator KO1 of the Operational Performance variable with a loading value of 0.809, indicating that the indicator is loading substantially on the latent variable. The CA values of all the variables are above 0.78, and CR ranges from 0.870 to 0.929, indicating super internal reliability. AVE is also higher than the minimum of >0.5, with the maximum of 0.722 in the Operational Performance variable, indicating high indicator variance extraction capability. Because all convergent validity and construct reliability criteria are met, the measurement model in this study can be considered valid and reliable, and suitable for further structural (inner) model testing.

Discriminant validity tests the extent to which a construct is empirically separable from other constructs, and in this study it was tested in two ways, i.e. the Fornell-Larcker Criterion and the Heterotrait-Monotrait Ratio (HTMT). Discriminant validity according to Fornell-Larcker is established if the square root of the AVE of a construct is greater than other constructs' correlations with guidelines on the main diagonal's square root of the AVE, as shown in Table 5 of the SmartPLS result. Whereas HTMT approximates correlation between constructs with guidelines of < 0.90 or < 0.85. Table 5 figures show that all the HTMT values are below the suggested ranges, thus confirming that discriminant validity in this model exists.

Table 5. Discriminant Validity

Fornell-Larcker Criterion				
Construct	Digital Culture	E-Leadership	Digital Capability	Operational Performance
Digital Culture	0.797			
E-Leadership	0.565	0.811		

Fornell-Larcker Criterion				
Construct	**Digital Culture**	**E-Leadership**	**Digital Capability**	**Operational Performance**
Digital Capability	0.785	0.612	0.774	
Operational Performance	0.744	0.755	0.772	0.815
Heterotrait-Monotrait Ratio				
Construct	**Digital Culture**	**E-Leadership**	**Digital Capability**	**Operational Performance**
Digital Culture				
E-Leadership	0.604			
Digital Capability	0.888	0.670		
Operational Performance	0.827	0.831	0.881	–

Source: SmartPLS 4 output, data processed (2025)

As is evident from the above table, all the diagonal values (bold) are higher than other columns and rows' correlations between constructs, thereby all constructs have fulfilled the Fornell-Larcker discriminant validity criteria. Also, from the results in Table 5, it can be observed that all the HTMT values are lesser than the cut-off value of 0.90, that is, every construct in the model has good discriminant validity and there are no multicollinearity issues between latentconstructs.

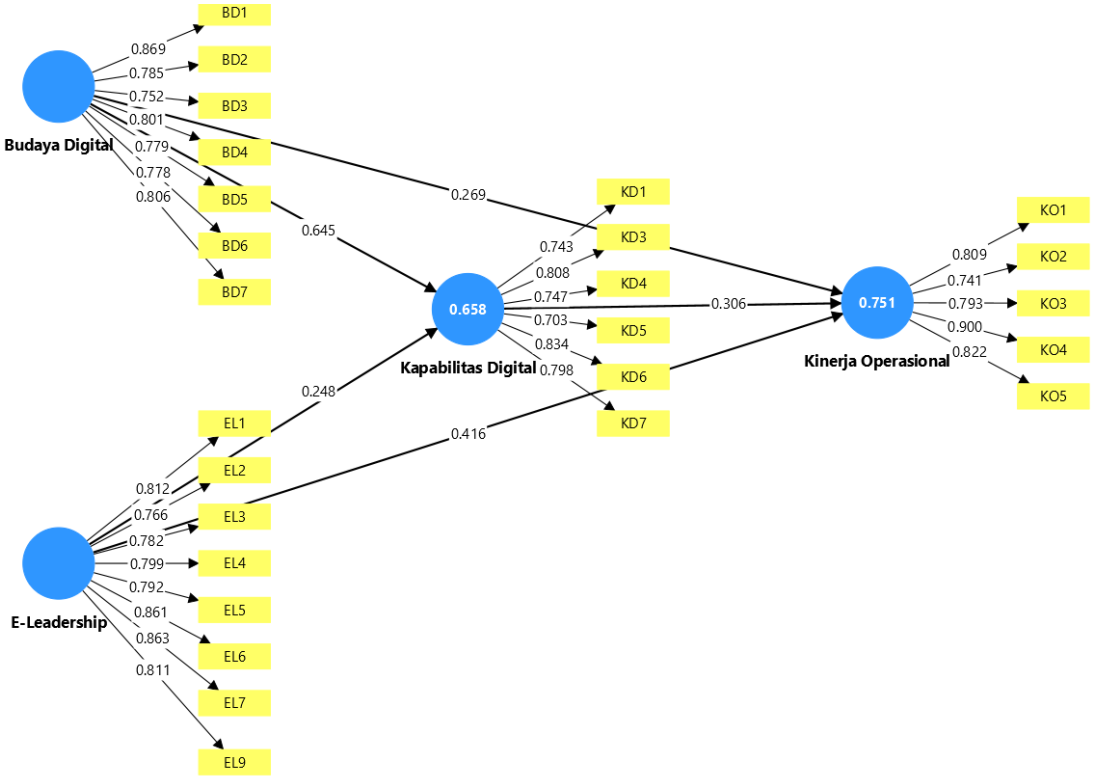

Figure 1. PLS Algorithm

4.3 Structural (Inner) Model

After testing the outer model showed that all constructs in this study were valid and reliable, the inner model (structural model) was subsequently tested. This was with the aim of testing the relationship between latent constructs and determining the predictive relevance of the research model.

a. R-Square Test (R^2)

R-Square (R^2) value is used to describe independent variables' contribution to dependent variables, with the higher the R^2 value, the

greater the model's predictive power. According to Chin (1998), the R^2 values are categorized as low (0.19), medium (0.33), and high (0.67). Based on the test results, the R^2 value of Digital Capability is 0.486, indicating that the variables of Digital Culture and E-Leadership can explain 48.6% of the variation of digital capability, which is classified as moderate. Meanwhile, the R^2 for Operational Performance is 0.651, and it indicates that Digital Capability can explain 65.1% of the variation of operational performance, which is ranked as moderate, near substantial, and showing a relatively high predictive power of the model.

b. F-Square Test (f^2)

The f^2 test is used to measure the specific effect size an independent construct has on a dependent construct, with the interpretations based on Cohen (1988) being: 0.02 = small, 0.15 = medium, and 0.35 = large. Based on the test results, the f^2 value of the relationship between Digital Culture and Digital Capability is 0.171 (moderate category), E-Leadership to Digital Capability is 0.113 (small category), and Digital Capability to Operational Performance is 0.408 (large category). These findings indicate that the influence of Digital Capability on Operational Performance is strongest in the model, and the influence of E-Leadership on Digital Capability, although small, has a significant part to play.

c. Q-Square (Q^2) Test

Q-Square (Q^2) is used to evaluate the predictive validity of a structural model, and a Q^2 value greater than 0 indicates the model has good predictive power. As seen from the results in Table 4.8, the Q^2 value for Digital Capability is 0.268 and for Operational Performance is 0.384. Since both are greater than zero, it can be concluded that this model has good predictive validity for both constructs.

d. Hypothesis Testing

Hypothesis testing was conducted to determine the direct and indirect effect between variables in the structural model, using the bootstrapping procedure in SmartPLS 4. The reference value was p-value < 0.05 and a 95% confidence interval not exceeding 0 as the basis for accepting the hypothesis. Direct effect was analyzed based on the relationship between latent constructs in the direct effect test results table. Indirect effect was analyzed, on the other hand, to see the role of Digital Capability as a mediating variable between Digital Culture and E-Leadership towards Operational Performance, through the path coefficient value, p-value, and 95% confidence interval.

Table 6. PLS Bootstrapping

Direct Effect						
	Influence Path	**Path Coefficient**	**p-value**	**Lower Bound**	**Upper Bound**	**Decision**
H2	Digital Culture → Operational Performance	0.269	0.029	-0.003	0.498	Accepted
H3	E-Leadership → Operational Performance	0.416	0.000	0.188	0.621	Accepted
H4	Digital Capability → Operational Performance	0.306	0.038	0.006	0.584	Accepted
H5	Digital Culture → Digital Capability	0.645	0.000	0.437	0.813	Accepted
H6	E-Leadership → Digital Capability	0.248	0.033	0.011	0.469	Accepted

Indirect Effect						
	Mediation Path	**Path Coefficient**	**p-value**	**Lower Bound**	**Upper Bound**	**Decision**
H7	Digital Culture → Digital Capability → Operational Performance	0.197	0.052	0.009	0.410	Rejected
H8	E-Leadership → Digital Capability → Operational Performance	0.076	0.142	0.004	0.221	Rejected

Source: SmartPLS 4 output, data processed (2025)

All hypotheses of this structural model (H2 to H6) are accepted, as all paths show a p-value < 0.05 and a 95% confidence interval in which zero is not an element, indicative of statistical significance. Specifically, H2 confirms that Digital Culture exercises a direct impact on Operational Performance, while H3 shows that E-Leadership exercises a significant direct impact too. H4 confirms Digital Capability has a causality with Operational Performance. Additionally, H5 and H6 prove Digital Culture and E-Leadership are two crucial determinants of Digital Capability enhancement. These findings reaffirm the digital elements of a firm are the determinants that unlock improving internal capabilities and enabling overall operational performance enhancement.

Hypothesis H7 is verified at p-value 0.052 and 95% confidence interval of 0.009 to 0.410, indicating that Digital Capabilities significantly mediate the relationship between Digital Culture and Operational Performance, but at the level of critical significance. H8 was rejected because the p-value 0.142 was higher than the 5% significance level, but the confidence interval did not span zero. This indicates that the indirect effect of E-Leadership on Operational Performance through Digital Capability is not statistically significant.

4.4 Discussion

a. Digital Culture on Digital Capabilities and Operational Performance

The research findings indicate that digital culture has a strongly significant impact on digital capabilities, with a strong and statistically significant relationship. Digital culture encompasses norms, values, and practices within an organisation that drive active adoption of technology, such as digital literacy, digital participation, and openness to technology-based innovation. High rates of the digital participation and digital values indicators in XYZ University mean that there is high awareness and positive dispositions to uptake technology in the majority of its programmes of study. This contributes directly to building digital abilities, e.g., sensing (capable of sensing changes), organizing (capable of handling technological opportunities), and transforming (capable of creating new digital-based services). These findings are in line with research carried out by [6], [12]which point out that digital culture is an essential pillar for constructing adaptive organizations and resilient digital abilities. Furthermore, test findings show that digital culture also positively and significantly affects working performance, albeit with a fairly small effect ($f^2 = 0.108$).

Digital culture assists in the improvement of work effectiveness, simplification of administration procedures, and maximization of productivity in service at the program study level. The digital literacy indicators, system security, and ethics of using technology indicate "good" performance, though not consistently

on the "very good" scale. The results coincide with the research of [1] and [7] who posit that digital culture can strengthen the values of teamwork and organizational speed in responding to change. University XYZ, however, has not yet had its digital culture more firmly strengthened, particularly in applying digital values on work processes and digital security and ethics awareness in a larger context.

b. The Influence of E-Leadership on Operation Performance

E-Leadership has been found to have a great direct impact on operational performance. This makes E-Leadership the most dominant variable in the study. Digital leadership aspects such as strategic direction, alignment, and commitment to digital transformation are great foundations in optimising study program activity. These results are in line with the results of [2] and [13], which indicate that digital leadership is a key driver of improving organizational effectiveness and efficiency through technological uptake. For the case of XYZ University, improving digital leadership not only improves administrative performance but also promotes an innovative culture that is responsive to innovation. However, the digital human resource development dimension still portrays poor achievement and should receive extra attention in ongoing training programs.

c. The Impact of Digital Capabilities on Operating Performance

Digital capabilities positively and significantly affect operating performance. But the effect is moderate to low ($f^2 = 0.096$). This implies that although digital skills such as sensing, organizing, and transforming play a role in driving performance, their impact is weaker than digital leadership. The transforming ability dimension is the weakest aspect, particularly in new services development. These results are consistent with the studies of [9], [14] which underscore the importance of synergy between the three pillars of digital capabilities in achieving operational excellence. Sensing and organizing capabilities in XYZ University are well established, while transforming capability in innovation and renewal of digital services is low. This indicates the need for increased investment in digital infrastructure and innovation capability in human resources because of

d. The Impact of Digital Culture on Digital Capability

Digital culture has been proven to have a very strong and significant effect on digital capabilities with a path coefficient of 0.645 and p-value of 0.000, and an f^2 value of 0.830 (large effect). These results confirm that digital culture constitutes the foundation for establishing adaptive and innovative digital competences at University XYZ. Sub-dimensions such as digital literacy and system security exercise effective facilitation of sensing and organizing capabilities. This study also confirms the dynamic capability concept of [4] as well as follow-up research by [6], [8] Rani et al. (2024) and Cyfert et al. (2025), which conclude that a strong organisational culture will propel digital readiness. This means that internalization of the digital values within the daily practice of study programs is a valuable capital for building comprehensive digital competences.

e. The Influence of E-Leadership on Digital Capabilities

E-Leadership exercises a significant influence on digital competences. However, its influence is quite small ($f^2 = 0.122$), which indicates that the role of E-Leadership

in building solid digital competences remains limited. While dimensions such as direction and alignment are deeply rooted, factors related to innovation speed and human resource development are areas that still have to be developed. This study confirms the findings of [15], [16], in which it was posited that E-Leadership can stimulate sensing and organizing capabilities but is currently not strong enough to trigger transforming capacities. Therefore, digital leadership training programs need to be reinforced so that E-Leadership not only directs but also reorganizes work systems in a physical sense.

f. The Mediating Role of Digital Capabilities between Digital Culture and Operational Performance

Digital capabilities have no significant mediating effect on the link between digital culture and operational performance. Although there is a positive directional relationship, the p-value close to the cut-off value indicates that the strength of the mediation is not strongly enough established to be termed statistically significant. The reason is that the weakness in transforming capability is a weak link in the dominant digital capability frame. Such a conclusion concurs with [13], [17], as they reiterate that digital capabilities must be truly optimal to function as good mediators. XYZ University needs to prioritize the building of its transforming capability so that the existing digital culture is maximally translated into performance improvement through digital capability.

g. Mediating Role of Digital Capability between E-Leadership and Operational Performance

As in the previously observed results, digital capability is also not a significant mediator for the relationship between E-Leadership and operational performance. This indicates that the indirect effect through digital capabilities has not been contributing enough so far, and the effect of E-Leadership is more pronounced with the direct route. This indicates that enabling digital leadership has not been fully followed by the presence of facilitating digital capability systems. [6], [16] identify through research that digital leadership must support digital capabilities for digital leadership to be impactful. University XYZ, therefore, needs to balance spending on leadership and digital infrastructure so that capabilities can serve as a strong bridge between strategy and action. Concurrently, E-Leadership and digital culture explain 75.1% of variation in operational performance even in the strong category. This implies that these two factors together constitute a strong synergy in improving service performance, process efficiency, and responsiveness to digital change. These results are in agreement with the studies of Retnowati & Santosa (2023) and Gyamerah et al. (2025) as they quote that integration of digital culture and leadership is crucial to the success of organizational change. In XYZ University, these results affirm that digital strategies cannot stand on their own but must be built in an integrated fashion within an environment of congruent culture and leadership.

5. CONCLUSION

This study aims to analyze the influence of Digital Culture and E-Leadership on Operational Performance, with Digital Capability as a mediating factor, in University XYZ study programs. The data analysis using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach indicates that

all of the direct effects among variables are statistically significant. E-leadership and digital culture were found to affect digital capabilities and to have a direct influence on operational performance. Digital capabilities directly influence performance as well. Nevertheless, only the association between digital culture and operational performance is highly mediated by digital capabilities. Mediation of digital capabilities on the relationship from e-leadership to operational performance is not significant.

5.1 Academic Contribution

This study is a theory contribution insofar as it builds upon the literature of digital transformation in universities, particularly in explaining the mediating role of digital capability. The model is a deeper explanation of the intersection of digital leadership and digital culture on organizational unit performance and provides stronger empirical validity of [4] dynamic model to an educational context.

5.2 Practical Contribution

In practice, this study provides critical recommendations to program managers and higher education leaders to create digital culture and e-leadership as a strategic asset in order to improve capabilities and operational efficiency. Special emphasis must be placed on transforming capability, i.e., the ability to create innovative digital-based services with explicit implications for operational quality and efficiency.

5.3 Limitations

Limitations of this study are the size of the sample, which is limited to just one higher learning institution, i.e., XYZ University. The cross-sectional nature also limits observation of the dynamics of digital change over the long term. The organizational culture and digital capability dimensions also do not reflect the richness of digital behavior at the individual level.

5.4 Future Research Direction

Additional research is recommended to broaden the organizational scope for greater generalizability, adopt longitudinal designs to observe gradual improvements in digital capabilities, incorporate variables like digital maturity or organizational flexibility as mediators, and employ mixed-method approaches to gain deeper contextual insights into digital behavior and strategic responses.

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