



The Relationship between Critical Thinking and Digital Leadership on Employee Performance through Strengthening Organizational Culture at Universitas Muhammadiyah Aceh

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Abstract

This study examines the role of organizational culture in mediating the influence of critical thinking and digital leadership on employee performance at the University of Muhammadiyah Aceh. Digital transformation demands that organizations have adaptive and innovative human resources, where critical thinking and digital leadership are key competencies expected to improve performance directly or through strengthening organizational culture. This study used a quantitative approach with a survey design and Structural Equation Modeling (SEM) analysis of 205 respondents who were all permanent employees of the university. The variables tested included critical thinking and digital leadership as independent variables, organizational culture as a mediating variable, and employee performance as a dependent variable. The results showed that critical thinking and digital leadership did not have a significant direct effect on employee performance, but both had a significant positive effect on organizational culture, which in turn had a significant effect on performance. Organizational culture was proven to partially mediate the relationship between critical thinking and digital leadership with employee performance. This finding emphasizes the importance of strengthening an adaptive and innovative organizational culture as a key pillar of performance improvement in the digital era. Practically, the research recommends the development of critical thinking training programs, improving digital leadership competencies, and strengthening a work culture that aligns with the university's vision and mission, as well as providing theoretical contributions to digital-based human resource management in higher education.

Keywords: *Critical thinking, digital leadership, employee performance, organizational culture*

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1. INTRODUCTION

Human resources (HR) represent a strategic asset that determines an organization's long-term sustainability and competitive positioning. Contemporary strategic HR literature emphasizes that organizational superiority is increasingly derived not from tangible assets, but from the cognitive and adaptive capabilities of its workforce (Ulrich et al., 2021; Becker & Huselid, 2020). In knowledge-based and digitally transforming environments, employee performance is fundamentally shaped by the ability of individuals to process complex information, respond to uncertainty, and collaborate effectively within evolving technological systems. Consequently, understanding the determinants of employee performance in the digital era remains a critical scholarly and managerial concern.

Employee performance is widely conceptualized as the outcome of interactions between individual competencies and organizational context (Robbins & Judge, 2021). Among the competencies most frequently associated with performance in digital environments are critical thinking and digital leadership. Critical thinking enables individuals to analyze information systematically, evaluate alternatives, and make evidence-based decisions (Facione, 2020). Digital leadership, in turn, reflects a leader's ability to strategically leverage digital technologies to drive organizational transformation and innovation (Gao & Gao, 2024). Empirical studies suggest that both constructs contribute positively to adaptability, innovation, and organizational effectiveness (Ateş et al., 2023; Öngel et al., 2023).

However, despite strong theoretical support, empirical findings regarding the direct influence of critical thinking and digital leadership on employee performance remain inconsistent. Some studies report significant direct effects, while others indicate weak or non-significant relationships when contextual variables are considered. This inconsistency raises an important theoretical question: Why do individual cognitive competencies and leadership capabilities not always translate directly into measurable performance outcomes?

A key limitation of prior research lies in its tendency to conceptualize performance improvement as a linear process, assuming that enhanced individual skills or leadership styles automatically produce improved results. Such an assumption overlooks the role of organizational systems that shape how competencies are enacted collectively. From an organizational behavior perspective, performance is not merely the aggregation of individual abilities, but rather the product of institutionalized norms, shared meanings, and coordinated behavioral patterns. Therefore, the absence of consistent direct effects suggests the presence of an intervening mechanism that mediates the relationship between competencies, leadership, and performance.

Organizational culture emerges as a theoretically compelling mediator. Defined as a system of shared values, norms, and beliefs that guide behavior within an organization (Jufrizen, 2020), organizational culture functions as a behavioral translation mechanism. Critical thinking, as a cognitive capacity, becomes impactful only when embedded within a culture that values analytical discourse and evidence-based decision making. Likewise, digital leadership influences performance primarily by shaping norms related to innovation, collaboration, and technological adoption. Without cultural internalization, these competencies remain isolated individual attributes rather than collective organizational capabilities.

The mediating role of organizational culture is further supported by structural theories of leadership and performance, which argue that leadership impacts outcomes indirectly by shaping organizational climate, values, and collective expectations. An adaptive and innovation-oriented culture strengthens knowledge sharing, enhances psychological safety, and reduces resistance to change conditions necessary for both critical thinking and digital leadership to influence performance effectively (Supardi & Aulia Anshari, 2022). Thus, organizational culture operates not merely as a contextual variable but as a structural enabler that institutionalizes cognitive and leadership capacities into sustainable performance outcomes.

Despite this theoretical relevance, empirical investigations integrating critical thinking, digital leadership, organizational culture, and employee performance within a single structural model remain limited, particularly in higher education institutions. Most prior studies focus on corporate or industrial sectors and rarely examine universities undergoing digital transformation, especially those embedded within distinct value based systems.

This research addresses this gap by examining the mediating role of organizational culture in the relationship between critical thinking, digital leadership, and employee performance within University Muhammadiyah Aceh. As a higher education institution grounded in Islamic values and currently navigating digital transformation, the university presents a context where alignment between cognitive competencies, leadership practices, and institutional culture becomes essential. Preliminary observations indicate limited application of analytical decision-making, uneven internalization of digital leadership behaviors, and a work culture that has yet to fully support innovation and technology integration. These conditions suggest that performance challenges may stem not from a lack of individual capability alone, but from insufficient cultural alignment.

Accordingly, this study proposes and empirically tests a mediation model in which organizational culture functions as the mechanism through which critical thinking and digital leadership influence employee performance. By doing so, this research contributes theoretically by clarifying the indirect pathways linking cognitive competencies and leadership to performance, and practically by highlighting the strategic importance of cultural transformation in digitally evolving higher education institutions.

2. LITERATURE REVIEW

2.1 Employee Performance

Employee performance is the level of individual success in carrying out tasks and responsibilities according to standards set by the organization. According to Mangkunegara (2021), performance is the work results achieved by an individual in carrying out their duties based on their abilities, experience, and commitment to work. Meanwhile, Robbins and Judge (2022) define performance as the concrete behavior displayed by an individual as a form of contribution to organizational goals. From a strategic perspective, employee performance does not merely represent individual achievement but reflects the effectiveness of organizational systems in aligning competencies, leadership, and cultural values toward common goals.

Employee performance reflects work results both quantitatively (volume of work, productivity) and qualitatively (accuracy, thoroughness, and responsibility). According to Armstrong and Taylor (2023), performance is influenced by the interaction between motivation, competence, organizational support, and leadership. This perspective implies that performance outcomes are shaped not only by individual capability but also by contextual organizational factors, particularly leadership practices and shared cultural norms that guide behavior.

Some indicators frequently used to measure employee performance include: Work quality, namely the extent to which work results meet expected standards. Work quantity, namely the volume of work produced within a specific time period. Punctuality, namely the ability to complete tasks on schedule. Cooperation, namely the ability to collaborate with coworkers. Initiative and responsibility, namely an individual's awareness in carrying out tasks without close supervision (Mangkunegara, 2021; Noe et al., 2020). These indicators demonstrate that performance is multidimensional and strongly influenced by both internal competencies and collective organizational dynamics.

Previous research by Putra and Wibowo (2023) showed that employee performance is positively influenced by strong leadership and organizational culture. In the context of the digital era, performance is increasingly determined by critical thinking skills and technology based leadership. However, consistent with the Resource Based View and Schein's cultural embedding theory, individual competencies and leadership practices tend to produce sustainable performance when institutionalized within organizational culture. Thus, employee performance is not only an indicator of individual success but also a reflection of the organization's success in embedding strategic values and digital transformation into its cultural system.

2.2 Critical Thinking

Critical thinking is the cognitive ability to analyze, evaluate, and draw logical conclusions from a problem. Facione (2020) defines critical thinking as an active and directed intellectual process involving self reflection in assessing the validity of information. Meanwhile, according to Ennis (2021), critical thinking is a person's ability to make rational decisions about what to believe or do. In the context of strategic human resource management, critical thinking represents a valuable cognitive resource that supports problem solving and adaptive decision making.

In an organizational context, critical thinking enables employees to systematically identify problems, evaluate alternative solutions, and make effective and efficient decisions (Paul & Elder, 2020). Employees with strong critical thinking skills are better able to face uncertainty and resolve work conflicts with a rational approach. When such analytical behaviors become shared practices within the organization, they contribute to shaping a rational, evidence-based, and adaptive organizational culture.

Indicators that describe critical thinking skills include: Interpretation the ability to understand and clarify information. Analysis the ability to break down information into essential elements. Evaluation the ability to assess the validity of data or arguments. Inference the ability to draw logical conclusions. Explanation the ability to explain the results of an assessment rationally. Self regulation the ability to consciously correct thinking errors (Facione, 2020). These dimensions not only enhance individual decision quality but also strengthen collective learning processes within the organization.

Research by Ateş et al. (2023) shows that critical thinking skills have a positive influence on employee performance and innovation because they encourage systematic and creative thinking. In the context of higher education, critical thinking skills are also crucial for improving the quality of administrative and academic decisions (Ratnasari et al., 2020). Nevertheless, theoretical arguments suggest that the influence of critical thinking on performance may operate more effectively when mediated by organizational culture, as shared norms and values determine how individual cognitive abilities are translated into coordinated organizational outcomes. Therefore, critical thinking is considered a crucial variable in improving work effectiveness and the quality of organizational outcomes through cultural reinforcement mechanisms.

2.3 Digital Leadership

Digital leadership is defined as a leader's ability to guide and inspire individuals and organizations in navigating digital change through the use of technology and transformation strategies (El Sawy et al., 2021). Digital leaders focus not only on mastering technology but also on building an innovative and collaborative culture that enables all members of the organization to thrive. This perspective aligns with Schein's view that leaders shape culture through strategic priorities, communication patterns, and behavioral modeling.

According to Türk (2023), digital leadership is a combination of transformational leadership, strategic capabilities, and digital literacy. Effective leaders in the digital era are able to create a direction for change, empower teams, and ensure technology is used to increase organizational efficiency and value. Through these processes, leaders embed digital values into organizational routines, thereby influencing collective performance indirectly.

Gao and Gao (2024) add that digital leadership has three main dimensions: Digital Competence the ability to understand, adopt, and optimize digital technology. Digital Vision the ability to set the strategic direction for digital transformation. Digital Collaboration the ability to create a technology-based collaborative work environment. These dimensions contribute to shaping an adaptive and innovative organizational culture that supports high performance.

Research by Öngel et al. (2023) demonstrates that digital leadership has a significant impact on employee innovation and performance, particularly in knowledge-based organizations. Digital leaders play a crucial role in creating a digital culture that encourages openness, innovation, and adaptation to new technologies. In the context of higher education such as Muhammadiyah University of Aceh, digital leadership is key to directing transformation toward efficient academic and administrative governance. However, consistent with cultural embedding theory, leadership influence on performance becomes more sustainable when mediated by organizational culture.

2.4 Organizational Culture

Organizational culture is a set of values, beliefs, and norms that shape behavioral patterns within an organization. According to Schein (2017), organizational culture consists of basic assumptions learned and applied by members to address challenges of external adaptation and internal integration. Robbins and Judge (2022) emphasize that organizational culture guides employee behavior and creates a distinct organizational identity.

Organizational culture functions to build loyalty, increase engagement, and strengthen coordination among members (Daft

& Marcic, 2021). According to Denison and Mishra (2022), there are four main dimensions of organizational culture: Involvement the level of employee participation and empowerment. Consistency the alignment of values and behaviors within the organization. Adaptability the ability to respond to environmental changes. Mission clarity of the organization’s goals and strategic direction. These dimensions collectively determine how effectively individual competencies and leadership practices are translated into performance outcomes.

Research by Supardi and Aulia Anshari (2022) shows that an adaptive organizational culture can strengthen the relationship between leadership and employee performance. Meanwhile, Jufrizen (2020) emphasizes that organizational culture can act as a mediator, strengthening the influence of managerial variables on performance. In the university context, an open and innovative organizational culture becomes a strategic mechanism that channels critical thinking and digital leadership into improved employee performance.

2.5 Hypothesis

Based on the description above, the research hypothesis can be formulated as follows:

1. H1: Critical thinking (CT) has a positive effect on employee performance (EP).
2. H2: Digital leadership (DL) has a positive effect on employee performance (EP).
3. H3: Critical thinking (CT) has a positive effect on organizational culture (OC).
4. H4: Digital leadership (DL) has a positive effect on organizational culture (OC).
5. H5: Organizational culture (OC) has a positive effect on employee performance (EP).
6. H6: Organizational culture (OC) mediates the relationship between critical thinking and employee performance (EP).
7. H7: Organizational culture (OC) mediates the relationship between digital leadership and employee performance (EP).

2.6 Research Framework

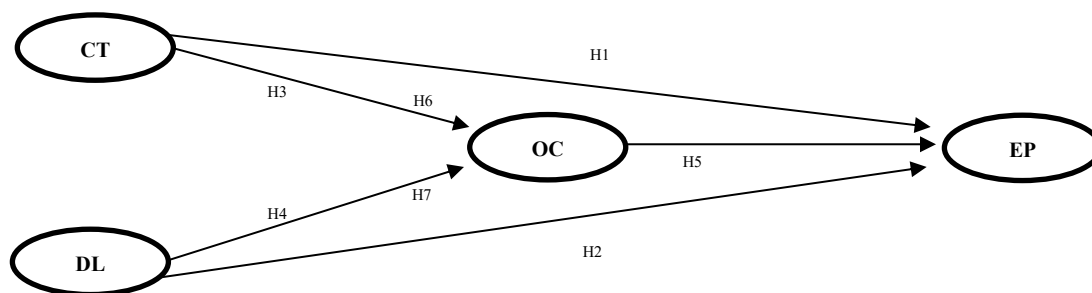


Figure 1. Research Framework

3. RESEARCH METHOD

This research applies a quantitative approach with an explanatory research design, designed to analyze and explain causal relationships between variables based on empirical data. A survey method was used to obtain primary data through the distribution of structured questionnaires to employees of the University of Muhammadiyah Aceh as the unit of analysis. The independent variables in this study are critical thinking and digital leadership, the dependent variable is employee performance, while organizational culture is positioned as a mediating variable. This research design allows researchers to test both direct and indirect influences between variables simultaneously, thus obtaining a comprehensive understanding of the role of organizational culture in strengthening the relationship between critical thinking, digital leadership, and employee performance. This approach was chosen because it objectively describes the phenomenon and allows for hypothesis testing based on empirical data within a confirmatory theoretical framework.

Data analysis was conducted using Structural Equation Modeling (SEM) with the aid of AMOS software version 24.0, which allows for the simultaneous analysis of multiple latent variables within a single integrated model while accounting for measurement error. SEM was selected because the study aims to confirm theoretically grounded relationships and test mediation

mechanisms rather than merely predict outcomes. Therefore, a Covariance Based SEM (CB SEM) approach was employed, as it is more appropriate for theory testing, confirmatory factor analysis (CFA), and global goodness-of-fit evaluation compared to Partial Least Squares SEM (PLS SEM), which is typically prediction-oriented and more suitable for exploratory or formative models.

This research was conducted at the University of Muhammadiyah Aceh (Unmuha), Banda Aceh, which was purposively selected because it is currently undergoing digital transformation in its governance and work systems, making it highly relevant to the research theme. The study period, from January to March 2025, included instrument development, pilot testing, validity and reliability testing, and questionnaire distribution. The study population comprised all 205 permanent Unmuha employees, including lecturers and administrative staff. Since the population size was manageable, a census approach was applied to enhance representativeness and reduce sampling bias.

The data used in this study consisted of primary and secondary data. Primary data was obtained through a closed-ended questionnaire measured using a 1–7-point Likert scale, ranging from "strongly disagree" to "strongly agree." Secondary data was collected from internal university documents such as personnel reports, organizational structures, and human resource statistics. The data collection process was conducted directly with respondents while adhering to research ethics, including confidentiality assurance, informed consent, voluntary participation, and exclusive use of data for academic purposes.

To obtain the data, the variable indicators were reduced to operationalized variables, namely:

Table 1 | Variable Operationalization

No	Variables	Indicator
1	Employee Performance (Y)	1. Work Quality 2. Work Quantity 3. Punctuality 4. Initiative and Creativity 5. Teamwork (Hasibuan, 2021)
2	Critical Thinking (X1)	1. Analytical Skills 2. Evaluation Skills 3. Inference Skills 4. Explanatory Skills 5. Self-Regulation (Facione, 2020)
3	Digital Leadership (X2)	1. Digital Innovation 2. Work Culture Transformation 3. Digital Communication 4. Productivity Improvement 5. Employee Empowerment (Kane et.al., 2020)
4	Organizational Culture (Z)	1. Values 2. Beliefs 3. Norms 4. Symbols & Rituals 5. Leadership Style 6. Communication Patterns Communication) 7. Decision-Making Process (Cicea et al., 2022)

Source: Data Processed (2025)

Given that the study relied on self-reported survey data collected from a single source at a single point in time, potential Common Method Bias (CMB) was carefully addressed. Procedural remedies were implemented, including ensuring respondent anonymity, clearly separating construct sections in the questionnaire to reduce psychological consistency bias, using validated measurement instruments from prior research, and refining item wording to avoid ambiguity. These steps were taken to minimize systematic measurement error at the design stage.

In addition to procedural controls, statistical tests were conducted to assess CMB. Harman's Single Factor Test was performed by loading all measurement items into an unrotated exploratory factor analysis. The results indicated that multiple factors emerged and that the first factor accounted for less than 50% of the total variance, suggesting that common method variance is not a serious concern. Furthermore, collinearity diagnostics using Variance Inflation Factor (VIF) values showed that all constructs were below the recommended threshold, indicating that multicollinearity and method bias did not significantly distort the relationships among variables.

Data analysis was conducted through several systematic stages. The first stage was descriptive statistical analysis to describe respondent characteristics and the distribution of research variables, including mean values, standard deviations, and score ranges. The second stage involved data quality testing through validity and reliability assessments. Validity testing was conducted using Confirmatory Factor Analysis (CFA) to ensure that each indicator significantly represented its latent construct, with a minimum standardized factor loading criterion of ≥ 0.50 . Construct reliability was evaluated using Composite Reliability (CR) and Cronbach's Alpha, with acceptance thresholds of ≥ 0.70 , ensuring internal consistency of the measurement model.

The third stage involved testing the measurement model and structural model using CB-SEM. Model fit was evaluated using multiple Goodness-of-Fit indices, including Chi-square/DF ≤ 3.00 , GFI ≥ 0.90 , AGFI ≥ 0.90 , CFI ≥ 0.95 , TLI ≥ 0.95 , and RMSEA ≤ 0.08 (Byrne, 2016). The use of these global fit indices further justifies the selection of CB-SEM over PLS-SEM, as CB-SEM provides comprehensive model fit evaluation necessary for confirmatory research. If the model demonstrated adequate fit, hypothesis testing was conducted through path analysis to determine the significance of direct effects. A Critical Ratio (CR) value of $\geq \pm 1.96$ and a p-value ≤ 0.05 indicated statistical significance.

Furthermore, testing the mediating effect of Organizational Culture was conducted using the bootstrapping procedure within the SEM framework to obtain indirect effect estimates and 95% bias-corrected confidence intervals. Mediation was considered significant if the p-value was < 0.05 and the confidence interval did not include zero. The type of mediation (partial or full) was determined by comparing the magnitude and significance of direct and indirect effects (Preacher & Hayes, 2008). This approach ensures robust estimation of mediation effects within a confirmatory structural framework.

Overall, the combination of procedural and statistical controls for common method bias, together with the confirmatory application of CB-SEM, strengthens the internal validity of the study and provides rigorous empirical support for the proposed mediation model. Through these methodological stages, the analysis is expected to generate reliable and theoretically meaningful evidence regarding the role of organizational culture in mediating the relationship between critical thinking, digital leadership, and employee performance.

4. RESULTS AND DISCUSSION

4.1 RESULTS

4.1.1. General Overview of the Research Object

Universitas Muhammadiyah Aceh (Unmuha) was established in 1987, originating from the Muhammadiyah College of Law in Banda Aceh. Currently, the university consists of seven faculties and one postgraduate program, offering 22 study programs. Located in Banda Aceh, Unmuha carries the vision of becoming a leading national university grounded in Islamic values. Its organizational structure is formally organized, with clearly defined leadership roles ranging from top management to faculty deans, reflecting an institutional framework that supports governance and digital transformation initiatives.

4.1.2. Respondent Characteristics

The study involved all 205 permanent employees of Universitas Muhammadiyah Aceh, including lecturers and administrative staff. The majority of respondents were female, aged between 31–40 years, and held a Master's degree. Most reported a monthly income ranging from Rp2,000,000 to Rp3,500,000 and had more than 10 years of work experience. These demographic characteristics indicate a workforce with mature professional competencies and substantial organizational

experience, thereby strengthening the credibility of the empirical analysis.

4.1.3. Descriptive Research Variables

Descriptive statistics show that respondents perceived all four main variables—Employee Performance, Critical Thinking, Digital Leadership, and Organizational Culture—positively. The mean scores for each variable approached or exceeded 6 on a 7-point Likert scale, indicating that employees generally evaluate performance levels, leadership practices, cognitive capabilities, and cultural conditions within the university as good to excellent. This suggests that Unmuha has established a relatively strong organizational foundation in terms of leadership, analytical capacity, and cultural alignment.

4.1.4. SEM Analysis Results

The Structural Equation Modeling (SEM) results confirm that Critical Thinking and Digital Leadership have significant positive effects on Organizational Culture. Organizational Culture, in turn, has a significant positive effect on Employee Performance. However, the direct effects of Critical Thinking and Digital Leadership on Employee Performance were not statistically significant.

These findings indicate that Organizational Culture fully mediates the relationship between both independent variables and employee performance. In other words, improvements in critical thinking and digital leadership contribute to enhanced employee performance only when they are internalized and institutionalized within the organization’s cultural framework.

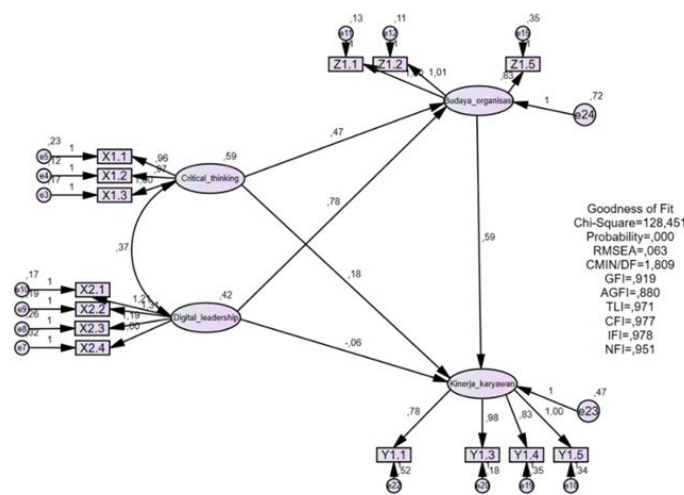


Figure 2. Full Model

Based on Figure 1, the standardized structural coefficients indicate that Critical Thinking has a positive effect on Organizational Culture ($\beta = 0.47$), reflecting a moderate effect size. This suggests that stronger analytical and reflective thinking skills among employees contribute meaningfully to the development of shared norms, rational decision-making practices, and adaptive organizational values.

Digital Leadership shows a stronger positive effect on Organizational Culture ($\beta = 0.78$), indicating a substantial influence. This coefficient confirms that leadership plays a dominant role in shaping cultural transformation, particularly in the context of digital governance and innovation. Leaders who promote digital vision, collaboration, and technological competence significantly reinforce organizational alignment and adaptability.

Furthermore, Organizational Culture positively affects Employee Performance ($\beta = 0.59$), representing a strong and practically meaningful relationship. This finding demonstrates that culture is the primary driver of performance within the model. A culture characterized by involvement, consistency, adaptability, and mission clarity creates a structured environment that enhances employee effectiveness.

In contrast, the direct effect of Critical Thinking on Employee Performance ($\beta = 0.18$) is positive but statistically insignificant, while the direct effect of Digital Leadership on Employee Performance ($\beta = -0.06$) is negative and insignificant.

These results indicate that neither cognitive capability nor leadership behavior directly improves performance once Organizational Culture is included in the model.

The mediation analysis confirms that both independent variables influence performance indirectly through Organizational Culture. The indirect effect of Critical Thinking on Employee Performance ($0.47 \times 0.59 \approx 0.28$) is stronger than its direct effect (0.18). Similarly, the indirect effect of Digital Leadership on Employee Performance ($0.78 \times 0.59 \approx 0.46$) substantially exceeds its direct effect (-0.06). Because the direct effects are insignificant while the indirect effects are significant and substantively larger, the model demonstrates full mediation.

From an explanatory perspective, the R^2 values further strengthen this conclusion. Organizational Culture shows a high proportion of explained variance, primarily driven by Digital Leadership and Critical Thinking. Employee Performance also demonstrates substantial explained variance, largely accounted for by Organizational Culture. This indicates that culture functions as the central transmission mechanism within the structural model.

Regarding measurement quality, Figure 1 also confirms that all standardized factor loadings exceed the acceptable threshold (≥ 0.50), and reliability indicators (Composite Reliability and Cronbach's Alpha) surpass 0.70. These results validate the convergent validity and internal consistency of the constructs.

Overall, Figure 1 substantiates a robust full mediation model in which Organizational Culture fully channels the effects of Critical Thinking and Digital Leadership toward Employee Performance. Substantively, this implies that performance improvement in a digitally transforming university is primarily a cultural process rather than a direct consequence of individual competence or leadership alone.

4.1.5. Hypothesis Testing

Hypothesis testing is carried out in two ways: direct hypothesis testing and mediation hypothesis testing.

Table 2 | Regression Weight Structural Equation Model

			Estimate	S.E.	C.R.	P	Label
Budaya_organisasi	<---	Critical_thinking	0,467	0,149	3,134	0,002	par_10
Budaya_organisasi	<---	Digital_leadership	0,781	0,18	4,333	***	par_13
Kinerja_karyawan	<---	Budaya_organisasi	0,591	0,072	8,24	***	par_11
Kinerja_karyawan	<---	Critical_thinking	0,178	0,128	1,384	0,166	par_12
Kinerja_karyawan	<---	Digital_leadership	-0,064	0,157	-0,41	0,682	par_14

Source: Primary Data, 2025, (processed)

From Table 2 above, the effect of Critical Thinking on Organizational Culture has a positive coefficient of 0.467, a C.R. of 3.134, and a p-value of 0.002, indicating a significant positive effect. Digital Leadership also has a positive and significant effect on Organizational Culture, with a coefficient of 0.781, a C.R. of 4.333, and a p-value of 0.000. Furthermore, Organizational Culture has a significant positive effect on Employee Performance (coefficient 0.591, C.R. of 8.240, p-value 0.000).

However, the direct effect of Critical Thinking on Employee Performance is not significant (coefficient 0.178, C.R. of 1.384, p-value 0.166), nor is the effect of Digital Leadership on Employee Performance significant (coefficient -0.064, C.R. of -0.410, p-value 0.682). This means that Critical Thinking and Digital Leadership do not directly and significantly impact employee performance. Regression and significance tests support the hypothesis that Critical Thinking and Digital Leadership do not have a significant direct effect on Employee Performance, but do have a significant effect on Organizational Culture. Furthermore, Organizational Culture significantly influences Employee Performance.

Table 3 | Mediation Test with Bootstrapping

Influence Path	Estimasi Indirect Effect	Lower Bound (95% BC)	Upper Bound (95% BC)	Significance (p-value)	Conclusion
<i>Critical thinking</i> → Organizational Culture → Employee Performance	0.059	0.044	0,457	0.009	Significant → accepted

Source: Primary Data, 2025, (processed)

The mediation hypothesis test showed that Organizational Culture acts as a significant mediator in the influence of Critical Thinking and Digital Leadership on Employee Performance. The indirect effect for Critical Thinking through Organizational Culture was 0.059 with a p-value of 0.009, while for Digital Leadership it was 0.177 with a p-value of 0.009, both of which were significant. This indicates that the effect of Critical Thinking and Digital Leadership on Employee Performance occurs indirectly through strengthening organizational culture.

4.2 DISCUSSION

The Structural Equation Modeling (SEM) results provide strong empirical support for the proposed full mediation model and offer important theoretical refinement regarding how employee performance is generated within digitally transforming institutions. The findings show that critical thinking and digital leadership do not exert statistically significant direct effects on employee performance ($p = 0.166$ and $p = 0.682$, respectively). While numerous prior studies report direct positive relationships between cognitive competence, leadership style, and performance outcomes, the present findings suggest that such direct effect models may overlook essential collective mechanisms.

The non significant direct effect of critical thinking challenges the assumption that superior analytical capability automatically leads to higher performance. Many previous studies conceptualize performance as an immediate behavioral outcome of individual competence, particularly in task-oriented or productivity-driven contexts. However, in knowledge intensive institutions such as universities, performance is structurally embedded within shared procedures, norms, and collaborative systems. Individual reasoning skills, no matter how strong, cannot independently generate institutional performance unless they are aligned with collective expectations and embedded within organizational routines. Thus, critical thinking operates as a cultural antecedent rather than a direct performance driver. This finding supports multilevel organizational behavior theory, which argues that cross-level effects require mediating collective structures.

Similarly, the absence of a direct effect of digital leadership on employee performance refines dominant leadership performance paradigms. Transformational and digital leadership studies frequently report immediate positive impacts on employee outcomes through motivation, empowerment, or inspiration. However, such findings are often derived from environments emphasizing short term performance indicators. In contrast, within institutions undergoing digital transformation, leadership influence appears to be systemic rather than immediate. Digital leadership shapes shared values, innovation norms, and adaptive mindsets. When organizational culture is included in the model, it absorbs the explanatory variance of leadership, indicating that leadership's true impact lies in cultural embedding rather than direct behavioral activation.

In contrast, both critical thinking ($p = 0.002$) and digital leadership ($p = 0.000$) significantly and positively influence organizational culture, while organizational culture significantly affects employee performance ($p = 0.000$). The mediation analysis confirms that organizational culture fully mediates these relationships. This full mediation pattern is theoretically meaningful: it demonstrates that performance improvement is contingent upon the institutionalization of cognitive capability and leadership practices within shared cultural systems.

Theoretically, this study makes three key contributions to organizational behavior literature. First, it challenges linear causality assumptions that dominate many competence performance and leadership-performance models. The findings indicate

that individual and leadership variables may not directly influence outcomes once collective mechanisms are accounted for. Second, it repositions organizational culture from a peripheral contextual variable or moderator to a central mediating infrastructure that structurally connects micro-level and macro level constructs. Third, it reinforces a multilevel perspective by demonstrating that sustainable performance emerges from the integration of individual cognition, leadership influence, and collectively internalized norms.

Therefore, the non-significant direct effects should not be interpreted as empirical weakness but as evidence of a more complex causal structure. In digitally evolving, knowledge based institutions, employee performance is not the immediate product of isolated competencies or leadership behaviors. Instead, it is an emergent outcome of culturally embedded processes that translate individual and leadership inputs into coordinated organizational action.

5. CONCLUSION

This study demonstrates that critical thinking and digital leadership exert a positive and statistically significant influence on the formation of organizational culture at the Universitas Muhammadiyah Aceh. The findings confirm that both individual cognitive capability and leadership capacity function as foundational drivers in shaping shared values, norms, and adaptive work practices within the institution. More importantly, organizational culture is empirically validated as a full mediating variable that significantly influences employee performance. Although critical thinking and digital leadership do not directly affect employee performance, their influence becomes substantial when transmitted through a strong and internalized organizational culture. This indicates that performance improvement in higher education institutions emerges not from isolated competencies or leadership actions, but from their integration into a coherent cultural framework.

The results underscore that organizational culture acts as a strategic bridge connecting cognitive and leadership resources with sustainable performance outcomes, particularly in the context of digital transformation and dynamic work environments. In other words, the effectiveness of critical thinking and digital leadership depends on the extent to which these capabilities are institutionalized within shared organizational values that promote collaboration, innovation, adaptability, and collective responsibility.

Based on these findings, it is recommended that the management of the Universitas Muhammadiyah Aceh and similar higher education institutions prioritize the systematic strengthening of an adaptive, innovative, and inclusive organizational culture. Cultural development initiatives should be strategically aligned with programs aimed at enhancing critical thinking competencies and digital leadership capabilities to create synergistic effects on performance improvement. In addition, institutions must ensure adequate digital infrastructure, technological support systems, and governance mechanisms that facilitate the practical implementation of digital leadership principles. Creating a conducive work environment characterized by open communication, transparent and equitable decision-making, and strong interdepartmental collaboration is essential to maximizing the performance impact of these initiatives.

This integrated approach is expected to enhance communication quality, strengthen collaborative culture, improve fairness in managerial processes, and ultimately increase employee productivity and institutional effectiveness. Finally, future research is encouraged to explore additional variables such as organizational commitment, innovation climate, psychological empowerment, or knowledge-sharing behavior that may further enrich understanding of the mechanisms linking organizational culture and employee performance in higher education settings.

6. LIMITATION AND IMPLICATION

The findings of this study indicate that improving employee performance in higher education institutions requires a strategic shift from isolated competency enhancement toward systemic cultural transformation. Since organizational culture fully mediates the effects of critical thinking and digital leadership on performance, managerial interventions should prioritize strengthening

cultural alignment as the central performance mechanism.

First, university management should institutionalize adaptive and innovation-oriented cultural values through formal governance frameworks, performance appraisal systems, and internal communication policies. Cultural reinforcement must move beyond symbolic statements and be embedded into measurable behavioral standards that promote collaboration, transparency, and evidence-based decision-making.

Second, leadership development policies should emphasize the cultural dimension of digital leadership. Rather than focusing solely on technological proficiency, digital leadership programs should cultivate leaders' capacity to shape shared norms, encourage experimentation, and foster collective learning. Leaders must act as consistent role models in utilizing digital systems for coordination, performance monitoring, and strategic planning, thereby reinforcing digital behaviors as institutional norms.

Third, human resource development strategies should integrate critical thinking training with organizational problem solving initiatives. Structured forums such as cross-functional task forces, digital innovation projects, and continuous improvement cycles can serve as platforms where critical thinking skills are collectively practiced and culturally embedded.

From a policy perspective, higher education institutions should adopt a phased digital transformation roadmap that balances technological investment with cultural readiness. Investments in infrastructure must be accompanied by initiatives aimed at strengthening psychological readiness, change adaptability, and collaborative work climates. Without cultural integration, technological upgrades alone are unlikely to produce sustainable performance improvements.

Overall, this study underscores that sustainable performance enhancement in digitally transforming universities is achieved not through direct managerial control, but through the deliberate alignment of culture, cognition, and leadership practices. Institutions that strategically integrate these elements are more likely to achieve long-term organizational effectiveness and resilience.

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