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THE INFLUENCE OF DIGITAL LEADERSHIP ON EMPLOYEE PERFORMANCE THROUGH WORK ENGAGEMENT

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ABSTRACT

This study examines the influence of digital leadership on employee performance, with a particular emphasis on the mediating role of work engagement. In the context of rapid digital transformation, organizational effectiveness is increasingly shaped not only by technological advancement but also by the readiness of human resources and leadership capabilities in managing digital change. A quantitative research approach was employed using a survey method involving N=150 employees working in organizations undergoing digital transformation. Data were analyzed using Structural Equation Modeling (SEM) with AMOS software. The results indicate that digital leadership has a significant positive effect on work engagement, which in turn enhances employee performance. Furthermore, mediation analysis confirms that work engagement plays a significant mediating role in the relationship between digital leadership and employee performance. Theoretically, this study extends the Job Demands–Resources (JD-R) framework by incorporating digital leadership as a critical job resource in the digital era. Practically, the findings provide important implications for organizations in designing leadership development strategies that foster employee engagement and improve performance outcomes in digitally transforming environments.

Keywords: Digital Leadership; Work Engagement; Employee Performance

INTRODUCTION

In recent years, digital transformation has become a dominant strategic concern in the field of human resource management. The rapid advancement of digital technologies has not only reconfigured organizational processes but also reshaped leadership practices and the ways organizations mobilize and empower their employees. As a result, the success of digital transformation can no longer be attributed solely to technological infrastructure; instead, it increasingly depends on the readiness of human resources and the effectiveness of leadership in managing digitally driven change (Verhoef et al., 2021; Vial, 2019; Zeike et al., 2019).

A growing body of recent empirical evidence suggests that many digital transformation initiatives fail due to an excessive focus on technological deployment without sufficient attention to human and behavioral dimensions. Studies indicate that organizations often face challenges such as employee resistance, lack of leadership capability, and low engagement when implementing digital transformation (Verhoef et al., 2021; Warner & Wäger, 2019; Sousa & Rocha, 2019). This highlights that technological investment alone is insufficient without parallel development in leadership and human resource practices.

From a theoretical perspective, the Job Demands–Resources (JD-R) framework provides a useful lens to explain how leadership functions as a job resource that enhances employees' motivational states (Bakker et al., 2023). In the context of digital transformation, digital leadership can be viewed as a critical job resource that fosters work engagement, which subsequently leads to improved employee performance. Recent studies have emphasized the importance of work engagement in driving employee outcomes and organizational performance (Saks, 2022; Knight et al., 2019).

However, despite the increasing interest in digital transformation, empirical studies that specifically examine the role of digital leadership in enhancing employee performance through work engagement remain limited. Prior research tends to examine leadership and performance relationships directly, without fully exploring the mediating mechanism of work engagement in digital contexts.

Therefore, this study aims to address this gap by investigating the mediating role of work engagement in the relationship between digital leadership and employee performance. This research contributes to the literature by extending the JD-R framework into the digital leadership context and providing recent empirical evidence on how leadership influences employee performance in the digital era.

LITERATURE REVIEW

Digital Leadership

Digital leadership refers to a leadership orientation that emphasizes the strategic use of digital technologies to shape organizational vision, foster innovation, and develop adaptive work cultures. Beyond technical competence, digital leadership reflects a leader's ability to manage digital transformation, encourage collaboration, and promote continuous learning across the organization (Zeike et al., 2019; Klein, 2020).

Recent empirical studies highlight that digital leadership plays a significant role in influencing employee attitudes and behaviors. For instance, Contreras et al. (2020) found that leaders who effectively respond to technological change can enhance employee engagement by strengthening clarity, trust, and organizational support. Similarly, El Sawy et al. (2020) emphasized that digital leaders act as change agents who align technological capabilities with human resource development to achieve organizational effectiveness.

Moreover, emerging studies suggest that digital leadership contributes directly to

employee performance by fostering innovation-oriented behavior and adaptability in dynamic environments (Cortellazzo et al., 2019; Sousa & Rocha, 2019). However, prior research often focuses on direct relationships, with limited attention given to the underlying psychological mechanisms that explain how digital leadership translates into improved performance outcomes.

Work Engagement

Work engagement represents a positive and persistent psychological state characterized by vigor, dedication, and absorption, reflecting the extent to which employees are cognitively, emotionally, and physically involved in their work (Bakker et al., 2023). Within the Job Demands–Resources (JD-R) framework, work engagement is conceptualized as a key motivational process that arises when employees are supported sufficient job resources, including effective leadership and organizational support (Bakker et al., 2023). Recent literature emphasizes that work engagement is a critical predictor of various organizational outcomes. Engaged employees tend to demonstrate higher levels of productivity, creativity, and organizational commitment (Knight et al., 2019). Furthermore, Saks (2019) argues that work engagement serves as a central mechanism linking leadership practices to employee outcomes, reinforcing its role as a mediating variable.

Despite its recognized importance, empirical research examining work engagement as a mediator in digital leadership contexts remains relatively limited. Most studies treat engagement as an independent predictor rather than as an explanatory mechanism, particularly within digitally transforming organizations.

Employee Performance

Employee performance refers to the extent to which employees effectively fulfill their job responsibilities and contribute to organizational goals. In the context of digital transformation, performance encompasses not only task completion but also adaptability, innovation, and responsiveness to technological change (Al-Omari et al., 2020). Recent studies further emphasize that employee performance in digital environments is closely linked to continuous learning, digital competence, and the ability to respond to dynamic work demands (Van Laar et al., 2020).

Recent empirical studies demonstrate that employee performance is influenced by both leadership factors and psychological conditions. For example, Al-Omari et al. (2020) found that leadership styles significantly affect employee performance through motivational processes. Similarly, Nguyen et al. (2019) showed that employee engagement plays a crucial role in enhancing individual performance, particularly in dynamic and technology-driven environments.

Additionally, contemporary research highlights that organizational success in digital contexts depends on the alignment between leadership capabilities and employee psychological readiness (Verhoef et al., 2021; Warner & Wäger, 2019). However, existing studies often examine these factors separately, resulting in limited understanding of how leadership and engagement interact to influence performance outcomes in digital transformation settings.

Hypothesis Development

Guided by insights from prior empirical studies and grounded in the Job Demands–Resources (JD-R) framework, this study develops a set of hypotheses to explain the interrelationships between digital leadership, work engagement, and employee performance. Within the JD-R perspective, leadership is positioned as a fundamental job resource that activates motivational processes and facilitates positive work-related outcomes.

In the context of digital transformation, digital leadership is assumed to play a crucial role in shaping an enabling work environment by offering strategic direction, support, and resources that help employees navigate digital change. Such conditions are expected to strengthen employees' psychological connection to their work, which is manifested through increased levels of work engagement. On this basis, the first hypothesis is formulated as follows:

H1: Digital leadership has a positive effect on work engagement.

Employees who are highly engaged in their work are characterized by elevated levels of energy, commitment, and concentration when performing job tasks. These psychological attributes have been widely acknowledged as key drivers of enhanced employee performance. Accordingly, the second hypothesis is proposed:

H2: Work engagement has a positive effect on employee performance.

Furthermore, the JD-R framework emphasizes that the influence of job resources, including leadership, may be transmitted through motivational mechanisms rather than operating solely through direct pathways. In this regard, work engagement is expected to serve as an intervening mechanism that explains how digital leadership translates into improved employee performance. Therefore, the following hypothesis is advanced:

H3: Digital leadership positively affects employee performance through the mediating role of work engagement.

RESEARCH METHOD

This study employed a quantitative research approach with an explanatory design to empirically test the relationships proposed in the conceptual model. The study focused on employees working in the Indonesian service sector, particularly in organizations that have adopted digital-based operational systems.

A purposive sampling technique was applied using specific inclusion criteria: respondents had to be active employees, regularly use digital technologies in their daily work, and have a minimum of one year of work experience within their organization. Based on these criteria, a total of 150 valid responses were obtained and used for further analysis.

The sample size is considered adequate for Structural Equation Modeling (SEM) analysis, as Hair et al. (2019) suggest a minimum sample size of 100–200 for SEM, depending on model complexity. Additionally, the sample size meets the recommended ratio of at least 5–10 observations per estimated parameter, ensuring sufficient statistical power and model stability.

Primary data were collected through a self-administered online questionnaire distributed via Google Forms. The use of an online survey facilitated broader reach and efficient data collection among respondents across different organizations. All measurement items were assessed using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

The measurement instruments were adapted from established and validated scales in prior studies to ensure construct validity and reliability. Specifically: Digital leadership was measured using items adapted from Zeike et al. (2019) and Cortellazzo et al. (2019). Work engagement was measured using the Utrecht Work Engagement Scale (UWES), which has been widely validated in recent studies. Employee performance was measured using indicators that capture both task performance and contextual performance, as validated in more recent studies (Al-Omari et al., 2020), which capture both task performance and contextual performance. Data analysis was conducted using Structural Equation Modeling (SEM) with AMOS software..

The analysis followed a two-step approach: first, the measurement model was evaluated

to assess construct validity (convergent and discriminant validity) and reliability (Cronbach's alpha and composite reliability). Second, the structural model was assessed to examine the hypothesized relationships among variables.

To address potential common method bias (CMB) arising from the use of self-reported data, several procedural and statistical remedies were applied. Procedurally, respondents were assured of anonymity and confidentiality to reduce evaluation apprehension and response bias. Additionally, measurement items were carefully structured and derived from different sources to minimize common scale effects. Statistically, Harman's single-factor test was conducted, and the results indicated that no single factor accounted for the majority of the variance (less than 50%), suggesting that CMB was not a serious concern in this study.

RESULTS AND DISCUSSION

Measurement Model

The adequacy of the measurement model was examined using Confirmatory Factor Analysis (CFA) to assess the quality of the measurement indicators, including indicator reliability, construct reliability, and both convergent and discriminant validity. The outcomes of the CFA are reported in Table 1, which displays the standardized factor loadings along with the reliability statistics for each latent construct included in the study.

Table 1. Confirmatory Factor Analysis (CFA) Results

Construct	Indicator	Standardized Loading
Digital Leadership	DL1	0.78
	DL2	0.81
	DL3	0.74
	DL4	0.69
Work Engagement	WE1	0.83
	WE2	0.79
	WE3	0.76
Employee Performance	EP1	0.85
	EP2	0.80
	EP3	0.72

All observed indicators demonstrate standardized factor loadings that surpass the commonly accepted cut-off value of 0.50, indicating that each item adequately represents its underlying latent construct.

To provide further evidence of measurement quality, construct reliability and convergent validity were assessed by calculating Composite Reliability (CR) and Average Variance Extracted (AVE) for all constructs. The outcomes of these evaluations are reported in Table 2, which presents the reliability coefficients and convergent validity indices for each latent variable.

Table 2. Construct Reliability and Convergent Validity

Construct	Composite Reliability (CR)	Average Variance Extracted (AVE)
Digital Leadership	0.86	0.61
Work Engagement	0.88	0.65
Employee Performance	0.84	0.57

The analysis shows that all latent constructs achieve Composite Reliability (CR) values above the recommended threshold of 0.70, while the corresponding Average Variance Extracted (AVE) values exceed 0.50. These findings provide strong evidence that the measurement model possesses sufficient internal consistency and meets the criteria for convergent validity.

To assess discriminant validity, the Fornell–Larcker criterion was applied by comparing the square root of the AVE for each construct with its correlations with other constructs. The results of this evaluation are presented in Table 3, which summarizes the discriminant validity assessment across all latent variables.

Table 3. Discriminant Validity Based on the Fornell–Larcker Criterion

Construct	Digital Leadership	Work Engagement	Employee Performance
Digital Leadership	0.78		
Work Engagement	0.56	0.81	
Employee Performance	0.49	0.63	0.75

For each latent variable, the square root of the Average Variance Extracted (AVE), represented by the diagonal values, is greater than the associated correlations with other constructs. This result provides clear evidence that the measurement model satisfies the criterion for discriminant validity.

Structural Model

After establishing the validity and reliability of the measurement model, the analysis proceeded to evaluate the structural model. Model adequacy was assessed by examining a range of goodness-of-fit indicators, which collectively reflect the degree to which the proposed model corresponds with the observed data. The results of the model fit assessment are presented in Table 4.

Table 4. Goodness-of-Fit Statistics for the Structural Model

Fit Index	Cut-off Value	Result	Evaluation
Chi-square/df	≤ 3.00	2.14	Good
CFI	≥ 0.90	0.93	Good
TLI	≥ 0.90	0.92	Good
RMSEA	≤ 0.08	0.061	Acceptable

The results demonstrate that the proposed structural model adequately represents the empirical data, indicating that the overall model fit meets acceptable criteria and is suitable for subsequent hypothesis testing.

The goodness-of-fit indices demonstrate that the structural model achieves an acceptable level of fitness, with all values meeting the recommended thresholds (e.g., CFI ≥ 0.90; RMSEA ≤ 0.08). This indicates that the proposed model adequately represents the observed data and is suitable for hypothesis testing.

Hypothesis Testing

The evaluation of the proposed hypotheses was conducted through an examination of the standardized path coefficients, critical ratio (CR) statistics, and corresponding significance values derived from the structural model analysis. The results of these estimations are summarized in Table 5, which presents the path relationships among the study variables.

Table 5. Structural Model Path Estimates

Hypothesis	Path	Standardized Estimate (β)	C.R.	p-value	Result
H1	Digital Leadership → Work Engagement	0.58	5.87	***	Supported
H2	Work Engagement → Employee Performance	0.65	6.42	***	Supported
H3 (Direct)	Digital Leadership → Employee Performance	0.24	2.31	0.021	Supported

***p < 0.001

The empirical evidence shows that digital leadership significantly enhances employees' work engagement, which subsequently contributes to improved employee performance. While digital leadership maintains a statistically significant direct association with performance outcomes, the inclusion of work engagement in the structural model leads to a noticeable reduction in the magnitude of this effect. This pattern indicates that work engagement operates as an explanatory mechanism through which digital leadership partially influences employee performance.

The results reveal that digital leadership has a significant positive effect on work engagement, which in turn significantly enhances employee performance. Additionally, digital leadership maintains a direct effect on employee performance, although the magnitude of this effect decreases when work engagement is included in the model. This finding indicates a partial mediation effect, suggesting that work engagement serves as an important explanatory mechanism linking leadership to performance outcomes.

Discussion

The results of this study reinforce the explanatory power of the Job Demands–Resources (JD-R) framework by empirically demonstrating the pivotal role of leadership as a strategic job resource in shaping employee motivation and engagement. In environments characterized by ongoing digital transformation, digital leadership functions as an enabling organizational capability that assists employees in coping with increasing work complexity and technology-driven job demands.

Consistent with earlier studies, the findings indicate that leadership behaviors oriented toward digital innovation and technological integration contribute positively to employees' engagement levels. Leaders who successfully embed digital tools into organizational routines do not merely improve task efficiency; they also cultivate a work climate that promotes psychological safety, role clarity, and perceived organizational support, all of which are critical antecedents of sustained engagement.

Furthermore, the positive linkage between work engagement and employee performance observed in this study corroborates prior evidence suggesting that engaged employees are more likely to exhibit heightened energy, dedication, and task focus, ultimately translating into superior performance outcomes. Within the Indonesian organizational context, this relationship assumes particular importance, given that digitalization initiatives often prioritize technological infrastructure while underestimating the human and behavioral dimensions of organizational change.

From a managerial perspective, these findings underscore the necessity of aligning digital transformation efforts with leadership development and engagement-oriented human resource practices. Investments centered solely on digital systems, without parallel initiatives aimed at strengthening leadership capabilities and nurturing employees' motivational states, may limit the long-term effectiveness of digital transformation and fail to deliver sustainable performance gains.

CONCLUSION

This study examines the influence of digital leadership on employee performance, with work engagement as a mediating variable. The findings reveal that digital leadership has both a direct and indirect effect on employee performance through work engagement. The mediation analysis indicates that work engagement partially mediates this relationship, highlighting its critical role as a psychological mechanism linking leadership practices to performance outcomes. From a theoretical perspective, this study contributes to the Job Demands–Resources (JD-R) framework by positioning digital leadership as a key job resource in the context of digital transformation. The findings extend prior research by demonstrating that digital leadership not only supports organizational processes but also enhances employees' motivational states, which in turn drive performance.

IMPLICATIONS

The findings of this study provide several practical implications for organizations undergoing digital transformation. First, organizations should prioritize the development of digital leadership capabilities by implementing structured leadership development programs, such as digital leadership training, executive coaching, and workshops focused on managing digital change and virtual teams.

Second, organizations are encouraged to design and implement employee engagement initiatives tailored to digital work environments. For example, organizations can introduce regular virtual feedback sessions, digital collaboration platforms, and recognition programs to strengthen employees' emotional and cognitive attachment to their work.

Third, organizations should adopt a more integrated approach to digital transformation by aligning technology adoption with human resource strategies. This can be achieved through practical initiatives such as: conducting digital skill workshops and continuous learning programs for employees, implementing mentoring systems to support adaptation to new technologies, and developing internal communication strategies that clearly convey digital transformation goals and expectations.

These concrete actions are essential to foster higher levels of work engagement, which ultimately contribute to improved employee performance and organizational effectiveness in dynamic digital environments.

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