

The Influence of Artificial Intelligence (AI) on Work Engagement and Employee Performance with Digital Leadership as Mediator

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Abstract

Keywords:

Artificial intelligence, Digital Leadership, Employee Performance, Work Engagement

The study investigates the influence of Artificial Intelligence (AI) on work engagement and employee performance, emphasizing the mediating role of digital leadership. A quantitative research approach was employed through a survey of 218 employees from digital companies in Indonesia. The sampling method was purposive, targeting individuals with at least one year of experience in AI-utilizing firms. Data were analyzed using Structural Equation Modeling (SEM) via the LISREL application to examine relationships among variables. The results indicate that AI significantly enhances both work engagement and employee performance. Furthermore, digital leadership serves as a significant mediator, amplifying the positive effects of AI. This finding underscores the importance of technology-driven leadership in translating AI capabilities into practical organizational outcomes. This study contributes to the literature on Artificial Intelligence (AI), work engagement, and employee performance by incorporating digital leadership as a mediating variable, addressing a gap in understanding how leadership strengthens the impact of AI utilization. Unlike prior studies that focus primarily on direct effects, this research highlights the pivotal role of leadership in linking AI's technological potential with tangible outcomes, offering a novel perspective within the Job Demands–Resources (JD–R) theory framework. Based on these findings, managers should prioritize developing digital leadership capabilities and aligning technological advancements with leadership strategies to foster a more engaged and high-performing workforce.

INTRODUCTION

In the era of the Industrial Revolution 4.0, artificial intelligence (AI) has become a key driver of organizational transformation and innovation across various industries (Ransbotham et al., 2020; Dwivedi et al., 2021). AI is no longer viewed merely as a tool for automation but has evolved into a critical catalyst for enhancing operational efficiency, enabling data-driven decision-making, and improving customer experiences (Brynjolfsson & McAfee, 2017; Raisch & Krakowski, 2021). According to a report by McKinsey (2021), over 50% of global companies have adopted AI technologies in some form, and this trend is expected to accelerate with continued technological advancements. However, despite its growing adoption, organizations face significant challenges in effectively integrating AI into their operations (Fountaine et al., 2019). One of these challenges involves the role of leadership in

ensuring that the potential benefits of AI are fully realized. Digital leadership, characterized by its ability to leverage digital technologies to achieve organizational goals, is increasingly recognized as an essential factor in navigating AI-driven transformations (Ward & Marr, 2021; Kane et al., 2018; Vial, 2019). Although existing literature highlights the impact of AI on productivity and engagement, there remains a notable gap regarding how digital leadership mediates these outcomes, thus underscoring the importance of this research (Divya et al., 2025; Munir et al., 2023; Shukla & Malhotra, n.d.; ultan Alateeg et al., 2025; Zia et al., 2025).

This study addresses a critical gap in current knowledge by exploring the interplay among AI, digital leadership, work engagement, and employee performance. While numerous studies have examined the direct effects of AI on organizational outcomes, few have investigated how leadership—particularly digital leadership—can serve as a bridge that amplifies the positive impacts of AI. This research offers a novel perspective by positioning digital leadership as a mediator, contributing not only to theoretical discourse but also providing actionable insights for practitioners aiming to implement AI-driven strategies effectively (Horlacher & Hess, 2016).

The conceptual framework of this study is underpinned by the Job Demands–Resources (JD-R) theory proposed by Bakker and Demerouti (2007). This theory posits that every job has specific demands, which can lead to stress if not managed properly, and resources, which help mitigate these demands and enhance employee well-being and engagement (Lesener et al., 2019; Schaufeli, 2017). In this context, AI serves as a technological job resource that can reduce routine work demands and allow employees to focus on more strategic tasks (Tarafdar et al., 2019; Jarrahi, 2018). Digital leadership acts as an additional organizational resource, fostering a supportive environment that maximizes the positive impacts of AI on work engagement and employee performance (Zeike et al., 2019; Sousa & Rocha, 2019; Cichosz et al., 2020).

Artificial intelligence has become one of the most transformative forces in contemporary organizations, reshaping how work is designed, coordinated, and evaluated. Recent global evidence shows that AI is no longer confined to experimentation: 78% of organizations reported using AI in at least one business function in 2024, up sharply from 55% a year earlier, while 71% reported regular use of generative AI in at least one function. This rapid diffusion indicates that AI has moved from being a technical innovation into a strategic organizational resource that affects operational speed, decision quality, and business competitiveness. At the same time, its expanding role raises an important organizational question: whether AI merely automates tasks or genuinely strengthens human engagement and performance in the workplace.

The urgency of this issue is reinforced by broader changes in the global labor market. The World Economic Forum reports that more than 1,000 major employers representing over 14 million workers expect substantial restructuring of work, with 170 million jobs projected to be created and 92 million displaced this decade, producing a net gain of 78 million jobs. The same report notes that 39% of key job skills are expected to change by 2030, with AI, big data, and technological literacy among the fastest-growing skill domains. These shifts suggest that the question is no longer whether organizations will adopt AI, but how they will manage its consequences for employees' motivation, adaptation, and sustained performance.

In the Indonesian context, the issue becomes even more relevant because employee exposure to AI is already relatively high. PwC's 2026 Indonesia release reports that 69% of Indonesian workers used AI for their role in the previous year, above the global figure of 54%. However, daily usage remains much lower, with only 16% reporting daily use of generative AI and 8% reporting daily use of agentic AI. This pattern suggests that adoption is expanding faster than deep integration. In other words, many employees have encountered AI, but not all organizations have yet translated that exposure into a stable work system that improves engagement and performance. That gap makes leadership especially important in ensuring that AI adoption becomes meaningful rather than superficial.

From a theoretical perspective, the relationship between AI and employee outcomes can be understood through the Job Demands–Resources framework, which is also consistent with this manuscript. Within this perspective, AI may function as a job resource by reducing repetitive tasks, accelerating access to information, and supporting more informed decisions, thereby allowing employees to allocate more energy toward creative and value-added work. Yet technological resources do not operate in a vacuum. Their effects depend on how organizations introduce them, how employees interpret them, and whether leaders can turn digital tools into a supportive work environment. This is why the interaction between AI adoption and leadership capability deserves deeper investigation rather than assuming that technology alone will produce positive behavioral outcomes.

Several prior studies support the argument that AI can positively influence work-related outcomes. Wijayati et al. found that AI had a significant positive effect on employee performance and work engagement, while change leadership strengthened that relationship in Indonesian service and banking firms. Prentice et al. (2023) also showed that AI performance significantly affected job engagement and service performance, which in turn contributed to job performance. These studies are important because they demonstrate that AI is not merely a technical system; it also shapes psychological and behavioral outcomes in organizations. However, much of this literature still emphasizes direct effects or uses leadership as a moderator, leaving room for further explanation of how leadership may operate as an intervening mechanism.

Research on digital leadership further suggests that leadership is central to making digital transformation effective at the employee level. Recent evidence indicates that digital leadership can strengthen work engagement and influence employee behavior by empowering workers, facilitating adaptation, and supporting participation in digitally mediated work environments. Other studies also connect digital leadership with organizational commitment, continuous learning, innovative work behavior, and stronger workplace performance in digital settings. Taken together, these findings imply that leaders are not passive observers of digital transformation; they actively shape whether technological change becomes energizing, stressful, inclusive, or alienating for employees.

Even so, an important research gap remains. Existing studies have largely examined AI and employee outcomes through direct relationships, or they have discussed leadership in general terms such as change leadership, transformational leadership, or leadership style. Far less attention has been given to digital leadership as a mediating mechanism that translates AI utilization into stronger work engagement and employee performance. This gap matters because AI may not automatically improve outcomes unless leaders create digital clarity,

reduce resistance, encourage upskilling, and model effective technology use. This manuscript directly addresses this underexplored mechanism by positioning digital leadership not as a background condition, but as the central bridge connecting AI capability with human outcomes in organizations.

The research is also urgent because many organizations still struggle to capture enterprise-wide value from AI despite rising adoption. McKinsey reports that more than 80% of respondents say their organizations are not yet seeing tangible enterprise-level EBIT impact from generative AI, even though usage has widened significantly. This suggests that adoption alone is insufficient; organizations must develop managerial, structural, and behavioral capabilities to convert AI into measurable performance gains. In this regard, digital leadership becomes a plausible strategic enabler because leaders shape implementation quality, trust, communication, incentives, and learning behavior. Investigating this mechanism is therefore not only academically relevant but also managerially necessary for firms facing pressure to justify AI investment.

The novelty of this research lies in integrating AI, digital leadership, work engagement, and employee performance into one explanatory model within the Indonesian digital-company setting. The manuscript specifically focuses on employees in AI-utilizing digital firms in Indonesia and examines whether digital leadership mediates the effect of AI on both work engagement and employee performance using structural equation modeling (SEM) with LISREL. This offers a stronger contextual and conceptual contribution than studies that only test direct effects, focus on non-digital leadership constructs, or examine different national and industrial settings. By doing so, the study expands current discussion from “whether AI matters” to “through what leadership mechanism AI produces better human and organizational outcomes.”

Based on that background, the purpose of this research is to analyze the effect of artificial intelligence on work engagement and employee performance and to examine the mediating role of digital leadership in those relationships. The objectives are to explain how AI contributes to employees’ psychological attachment to work, how it affects the quality and effectiveness of performance, and how digital leadership strengthens or channels these effects. The expected contribution of the study is threefold: theoretically, it enriches JD-R and digital leadership literature; empirically, it provides evidence from Indonesia’s digital business environment; and practically, it offers guidance for managers to align AI adoption with leadership development, employee support, and capability building. Ultimately, the benefit of this research is to help organizations pursue digital transformation that is not only technologically advanced but also human-centered and performance-enhancing.

METHODS

This study employed a quantitative research design to investigate the influence of artificial intelligence (AI), on work engagement, and employee performance, digital leadership as mediator. The research design is structured to collect empirical data and perform statistical analysis to test the proposed hypotheses. The target population for this study includes employees working in digital-based companies across Indonesia. These companies were selected based on their intensive use of digital technologies, including AI, in their operational processes. The inclusion criteria required that respondents have at least one year

of experience working in these organizations, ensuring familiarity with AI applications in the workplace.

The sample size for this study was determined using the guidelines provided by Hair et al. (2010), which recommend a sample size that is five to ten times the number of indicators used in the research model. Given that the research model includes 42 indicators, a minimum sample size of 210 respondents was deemed appropriate. Ultimately, data were collected from 218 respondents through purposive sampling, a non-probability sampling technique. This technique was employed to ensure that the selected participants met specific criteria relevant to the study, particularly their experience with AI and digital leadership in their organizations.

Data collection was conducted through a structured questionnaire distributed via online platforms, including social media and direct messaging applications. The questionnaire included closed-ended questions designed to capture respondents' perceptions of AI utilization, digital leadership, work engagement, and employee performance. Filtering questions were used at the beginning of the questionnaire to confirm the eligibility of respondents based on the study's inclusion criteria.

Information on the demographics and characteristics of the respondents tested and analyzed can be seen in Table 1. Male employees dominated respondents, amounting to 149 people (68.3%). The age of respondents was dominated by the category of 40-49 years, which amounted to 67 people (30.7%). The education level of respondents was dominated by the bachelor level, which amounted to 142 people (65.1%). The working period of respondents was dominated by the > 5 years (more than 5 years) category, which amounted to 121 people (55.5%), with the working system from the office 134 people (61.5%). Furthermore, respondents in this study were nominated by employees working in the Jakarta, Bogor, Depok and Bekasi (Jabodetabek) area, namely 179 people (82.1%) in the job function of Marketing/sales 55 people (24.8%) at staff level 83 people (38.1%).

Table I. Characteristics of respondents

	Demography	Total	Age
Gender			
	Male	149	
	68.3%		
	Female	69	
	31.7%		
Age			
	19—29 Tahun	42	
	19.3%		
	30—39 Tahun	64	
	29.4%		
	40—49 Tahun	67	
	30.7%		
	≥ 50 Tahun	45	
	20.6%		

Education Level		
1.4%	SMA	3
2.8%	D1/D2/D3	6
65.1%	S1/D4	142
27.1%	S2	59
3.7%	S3	8
Working Periode		
27,10%	1—5 Tahun	59
55.5%	> 5 Tahun	121
17.4%	> 10 Tahun	38

Age	Demography	Total
Work System		
61.5%	Work From Office	134
11.5%	Work From Home/Anywhere	25
27.1%	Hybrid	59
Work Location		
82.1%	Jabodetabek	179
8.3%	Pulau Jawa (Non Jabodetabek)	18
8.7%	Luar Pulau Jawa	19
0.9%	Anywhere	2
Job Function		
2.3%	Customer Service	5
21.1%	Engineering	46
8.7%	Finance	19

12.4%	Human Resource	27
24.8%	Marketing / Sales	55
23.4%	Operation	51
5.5%	Lainnya	15
Job Level		
38.1%	Staff	83
10.1%	Supervisor	22
1.8%	Assistant Manager	4
25.7%	Manager	56
0.9%	Senior Manager	2
14.7%	Head	32
4.1%	Board of Director	9
4.6%	Specialist/Expert	10

Source: Researcher Processed Results (2024)

This study uses 4 variables, namely AI utilization, digital leadership, work engagement, and employee performance. AI utilization refers to the extent to which AI technologies are adopted and applied in daily organizational operations. Digital leadership is defined as the ability of leaders to effectively manage and lead digital transformation within their organizations. Work engagement is measured by the level of energy, dedication, and absorption exhibited by employees in their work, while employee performance is evaluated based on the quality, quantity, and timeliness of the tasks completed.

Table 2. Operational definitions & measurement items

Construct	Dimensions	Indicator	Measurement Items	Source
Artificial intelligence (AI)	Unidimensional	AI1	AI can help me find data I don't have	Paschen et al., (2019)
Construct	Dimensions	Indicator	Measurement Items	Source
Artificial intelligence (AI)	Unidimensional	AI2	AI provides accurate data and information	Paschen et al., (2019)
		AI3	Artificial intelligence can help me in making	

		AI4	important decisions in the company
		AI5	AI can help surface data that is difficult to measure
		AI6	AI can protect your privacy of yourself and others
		AI7	AI can help me in in getting the job done
			The authorities can easily audit AI
Work Engagement (2006) (WE)	Vigor	WE1	In my work, I feel full of energy
		WE2	In my work, I feel strong and Enthusiastic
		WE3	When I wake up in the morning, I feel like going to work.
	Dedication	WE4	I am enthusiastic about my work
		WE5	My work inspires me
		WE6	I am proud of the work that I do
	Absorption	WE7	I feel happy when I am working intensely
		WE8	I am immersed in my work
		WE9	I get carried away when I am working
Employee Performance (EP)	Unidimensional	EP1	Tasks are completed as perNa-nan et al., the specifications and standards (2018)
		EP2	Products or services meet the expectations of customers
		EP3	The units of output meet organizational expectations
		EP4	The units of output under my responsibility correspond to my skills and ability
		EP5	Tasks are generally completed on schedule
		EP6	Tasks are carried out within a reasonable amount of time
		EP7	The delivery of goods or services is conducted in a timely fashion

Construct	Dimensions	Indicator	Measurement Items	Source
Digital Leadership (DL)	Unidimensional	DL1	My immediate supervisor is involved in raising awareness of the technology that can be used to increase productivity.	Hassi et al., (2022)
		DL2	My immediate superior plays an active role in reducing resistance to innovation as an impact of digital technology	
		DL3	My immediate superior gives me an important role in research and development activities related to information technology	
		DL4	My direct supervisor encourages employees to take part in	

			training activities related to digitalization to continue to improve their skills.upgrade knowledge and skills	
		DL5	My immediate superior keeps abreast of developments in the field digital/informatics carefully.	
		DL6	My direct supervisor utilizes digital technology in the meetings he holds	
		DL7	My immediate superior uses digital and information technology to develop global communications	
		DL8	My direct supervisor utilizes digital technology and media (computers, internet, mobile media, etc.) to access information	
		DL9	My immediate superior leads by referring to the use of information and digital technology to create a wider communication network	
		DL10	My immediate superior actively utilizes digital technology to complete work	
		DL11	My immediate superior utilizes digital technology in communication or in collaboration with stakeholders	
		DL12	My direct supervisor leverages digital technology to build relationships with colleagues from across disciplines	
		DL13	My immediate superior implements ethical behavior in the use of digital technology.stakeholders-his	
Construct	Dimensions	Indicator	Measurement Items	Source
Digital Leadership (DL)	Unidimensional	DL14	My immediate superior tries to encourage the creation of information infrastructure such as technological devices and other facilities that can be utilized by all employees in the organization	Hassi et al., (2022)
		DL15	My immediate manager raised awareness about the benefits of digital technology	
		DL16	My immediate raised awareness about the risks of utilizing digital technology	
		DL17	My immediate manager introduces the institution where I work on social media or other online media	
		DL18	My immediate manager is happy to share his/her experience on technologies that can contribute to work and learning	
		DL19	To increase participation in the organization's vision, my immediate manager provided a guide on	

The data collected were analyzed using Structural Equation Modeling (SEM) with the LISREL software. This analytical approach was selected due to its ability to simultaneously assess multiple relationships among the variables and provide robust insights into the mediating role of digital leadership. The SEM analysis included several stages, such as model specification, identification, estimation, testing, and modification. Fit indices were used to evaluate the overall fit of the model, and hypothesis testing was conducted to determine the significance of the relationships among the variables.

Before performing SEM analysis, preliminary data checks were conducted to assess data completeness and ensure that there were no missing values or outliers that could skew the results. Descriptive statistics were generated to provide an overview of the sample characteristics, including means, standard deviations, and frequencies for each variable. Additionally, reliability tests using Cronbach's alpha were conducted to confirm the internal consistency of the measurement scales (Hair et al., 2010).

The SEM analysis proceeded in several key stages. First, the measurement model was tested to validate the constructs and ensure that the observed variables adequately represented the latent variables. Confirmatory Factor Analysis (CFA) was used to assess the validity of the measurement model by examining factor loadings, Average Variance Extracted (AVE), and Composite Reliability (CR) values (Bollen, 1989). Once the measurement model achieved an acceptable level of fit, the structural model was evaluated to test the hypothesized relationships among the variables.

Fit indices, such as the Chi-square statistic, Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA), were employed to determine the goodness-of-fit of the model (Kline, 2011). Hypothesis testing was conducted by examining the path coefficients and their associated p-values to establish the significance of the relationships. The results of these analyses provided insights into the direct effects of AI on work engagement and employee performance, as well as the mediating role of digital leadership.

RESULT AND DISCUSION

Measurement Model

Variables Artificial intelligence has seven indicatorsItem. Based on the results of the validity and reliability tests available in the table, all indicators contained in the variables artificial intelligence can be said to be valid because it meets the value requirements loading factor ≥ 0.5 . In addition, the variable artificial intelligence can also be said to be reliable because it has met the requirements of CR value ≥ 0.7 and VE value ≥ 0.5 . Therefore, it can be concluded that the variable artificial intelligence has good validity and reliability.

Variables Digital leadership has 19 indicatorsItem. Based on the results of the validity and reliability tests available in the table, all indicators contained in variable digital leadership can be said to be valid because it meets the value requirements loading factor ≥ 0.5 . In addition, the variable digital leadership can also be said to be reliable because it has met the

requirements of CR value ≥ 0.7 and VE value ≥ 0.5 . Therefore, it can be concluded that the variable digital leadership has good validity and reliability.

Employee performance has seven indicators. Based on the results of the validity and reliability tests available in the table, all indicators contained in the variables employee performance can be said to be valid because it meets the value requirements loading factor ≥ 0.5 . In addition, the variable employee performance can also be said to be reliable because it has met the requirements of CR value ≥ 0.7 and VE value ≥ 0.5 . Therefore, it can be concluded that the variable employee performance has good validity and reliability.

Variables Work engagement measured based on UWES which consists of three dimensions: vigor, dedication, and Absorption. Each dimension has three indicators. Based on the results of the validity and reliability tests available in the table, all indicators contained in each dimension in the variables work engagement can be said to be valid because it meets the value requirements loading factor ≥ 0.5 . In addition, the variable work engagement can also be said to be reliable because it has met the requirements of CR value ≥ 0.7 and VE value ≥ 0.5 . Therefore, it can be concluded that the variable work engagement has good validity and reliability.

Table 3. First stage measurement model

Construct	Indicator	Standard Loading	Result	CR	VE	Result
Artificial Intelligence (AI)	AI1	0.65	Valid	0.88	0.50	Reliable
	AI2	0.80	Valid			
	AI3	0.77	Valid			
	AI4	0.74	Valid			
	AI5	0.67	Valid			
	AI6	0.67	Valid			
	AI7	0.65	Valid			
Digital Leadership (DL)	DL1	0.71	Valid	0.98	0.68	Reliable
	DL2	0.70	Valid			
	DL3	0.75	Valid			
	DL4	0.70	Valid			
	DL5	0.88	Valid			
	DL6	0.86	Valid			
	DL7	0.89	Valid			
	DL8	0.78	Valid			
	DL9	0.88	Valid			
	DL10	0.86	Valid			
	DL11	0.84	Valid			
	DL12	0.88	Valid			
	DL13	0.87	Valid			
	DL14	0.88	Valid			
	DL15	0.90	Valid			
	DL16	0.87	Valid			
	DL17	0.69	Valid			
	DL18	0.84	Valid			
	DL19	0.81	Valid			
Employee Performance	EP1	0.67	Valid			

(EP)	EP2	0.70	Valid	0.89	0.53	Reliable
	EP3	0.80	Valid			
	EP4	0.75	Valid			
	EP5	0.73	Valid			
	EP6	0.68	Valid			
	EP7	0.76	Valid			
Vigour (VI)	VI1	0.93	Valid	0.89	0.74	Reliable
	VI2	0.96	Valid			
	VI3	0.66	Valid			
Dedication (DE)	DE1	0.92	Valid	0.91	0.77	Reliable
	DE2	0.86	Valid			
	DE3	0.85	Valid			
Absorption (AB)	AB1	0.62	Valid	0.79	0.56	Reliable
	AB2	0.83	Valid			
	AB3	0.77	Valid			

Source: LISREL (reworked) (2024)

Table 4. Second stage measurement model

Construct	Indicator	Standard Loading	Result	CR	VE	Result
Artificial Intelligence (AI)	AI1	0.66	Valid	0.87	0.50	Reliable
	AI2	0.80	Valid			
	AI3	0.77	Valid			
	AI4	0.73	Valid			
	AI5	0.66	Valid			
	AI6	0.67	Valid			
	AI7	0.64	Valid			
Digital Leadership (DL)	DL1	0.70	Valid	0.98	0.68	Reliable
	DL2	0.69	Valid			
	DL3	0.74	Valid			
	DL4	0.69	Valid			
	DL5	0.88	Valid			
	DL6	0.86	Valid			
	DL7	0.89	Valid			
	DL8	0.78	Valid			
	DL9	0.87	Valid			
	DL10	0.78	Valid			
	DL11	0.85	Valid			
	DL12	0.84	Valid			
	DL13	0.89	Valid			
	DL14	0.88	Valid			
	DL15	0.88	Valid			
	DL16	0.91	Valid			
	DL17	0.87	Valid			
	DL18	0.69	Valid			
	DL19	0.84	Valid			
Employee Performance (EP)	EP1	0.67	Valid	0.89	0.53	Reliable
	EP2	0.69	Valid			
	EP3	0.81	Valid			
	EP4	0.73	Valid			
	EP5	0.74	Valid			
	EP6	0.69	Valid			
	EP7	0.77	Valid			

Vigour (VI)	VI1	0.93	Valid	0.89	0.74	Reliable
	VI2	0.96	Valid			
	VI3	0.66	Valid			
Dedication (DE)	DE1	0.91	Valid	0.91	0.76	Reliable
	DE2	0.86	Valid			
	DE3	0.85	Valid			
Absorption (AB)	AB1	0.77	Valid	0.68	0.41	Reliable
	AB2	0.60	Valid			
	AB3	0.54	Valid			
Work Engagement (WE)	VI	0.93	Valid	0.93	0.82	Reliable
	DE	0.98	Valid			
	AB	0.79	Valid			

Source: LISREL (reworked) (2024)

Structural Model

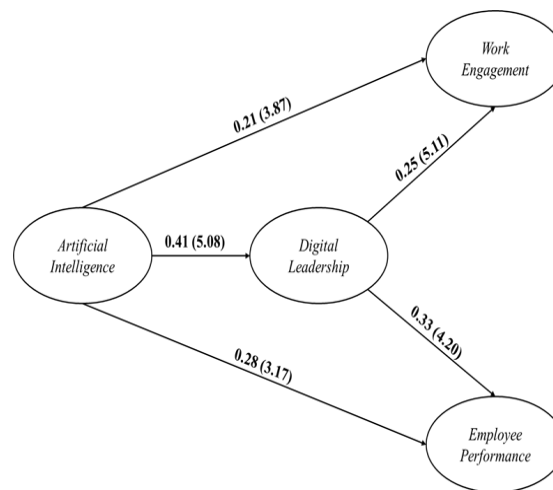


Figure 2. Path Diagram

Based on the model image above, the results of the direct influence between variables can be seen and are equipped with a path diagram (path diagram), Andt-value, which can then be used to analyze the relationship as follows.

Table 5. Significance test results (Direct effect)

Hypothesis	Path	T-Value	Conclusion
H1	AI→Work engagement	3.87	Hypothesis accepted
H2	AI→Employee performance	3.17	Hypothesis Accepted
H3	AI→Digital leadership	5.08	Hypothesis Accepted
H4	Digital leadership→Work engagement	5.11	Hypothesis Accepted
H5	Digital leadership→Employee performance	4.20	Hypothesis Accepted

Source: LISREL (reworked) (2024)

Table 6. Results of Mediation Influence Analysis

Hypothesis	Path	a	b	Sa	Sb	Sobel Value	Conclusion
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H6	AI→Digital leadership → Work engagement	0.41	0.25	0.080	0.050	3.58	Significant (Partial Mediation)
H7	AI→Digital leadership → Employee performance	0.41	0.33	0.080	0.079	3.24	Significant (Partial Mediation)

Source: LISREL (reworked) (2024)

Table 7. Hypothesis Testing Results

Hypothesis	Hypothesis Statement	Parameter	Research result
H1	AI has a positive and significant influence on work engagement	t-value 3.87	Hypothesis Accepted
H2	AI has a positive and significant influence on employee performance	t-value 3.17	Hypothesis Accepted
H3	AI has a positive and significant influence on digital leadership	t-value 5.08	Hypothesis Accepted
H4	Digital leadership has a positive and significant influence on work engagement	t-value 5.11	Hypothesis Accepted
H5	Digital leadership has a positive and significant influence on employee performance	t-value 4.20	Hypothesis Accepted
H6	Digital leadership mediates the positive relationship between AI and work engagement	t-value 3.58	Hypothesis Accepted
H7	Digital leadership mediates the positive relationship between AI and employee performance	t-value 3.24	Hypothesis Accepted

Source: LISREL (reworked) (2024)

The findings of this study confirm the significant positive effects of AI on both work engagement and employee performance. AI, when effectively utilized, enhances employees' ability to focus on high-value tasks by automating routine activities, thereby improving their overall engagement at work. This finding is consistent with previous studies (Hughes et al., 2019; Wijayati et al., 2022), which have emphasized the role of AI in increasing productivity and motivation through task optimization.

Digital leadership was found to play a critical mediating role in the relationship between AI and the key organizational outcomes. Leaders who possess digital competencies can effectively guide their teams through technological transitions, ensuring that AI is not only implemented but also integrated in a manner that supports strategic goals. This supports the assertions of Horlacher and Hess (2016), who highlighted that digital leadership is essential for fostering an adaptive and innovative organizational culture.

Moreover, the study's application of the Job Demands-Resources (JD-R) theory provides a strong theoretical foundation for understanding how AI acts as a resource that reduces job demands and enhances engagement. By leveraging AI as a job resource, employees are better equipped to handle complex tasks, leading to improved performance. This aligns with the work of Bakker and Demerouti (2007), who argued that job resources play a pivotal role in mitigating job stress and promoting employee well-being.

The study also underscores the importance of cultivating digital leadership within organizations undergoing digital transformation. As AI continues to evolve, the role of leaders in managing technological change becomes increasingly critical. Leaders must not only adopt digital tools but also foster an environment that encourages innovation and continuous

learning. This echoes findings by Divya et al. (2024), who suggested that leadership styles tailored to the digital era can significantly influence employee engagement and performance.

In practical terms, organizations should invest in leadership development programs that emphasize digital skills and strategic thinking. By doing so, they can ensure that their leaders are well-prepared to harness the full potential of AI technologies. Furthermore, creating a supportive organizational culture that values collaboration and adaptability will be key to sustaining the positive impacts of AI-driven initiatives.

CONCLUSION

This study demonstrates that artificial intelligence (AI) significantly enhances work engagement and employee performance, with digital leadership acting as a crucial mediator that strengthens the effectiveness of AI-driven initiatives by enabling employees to shift from routine tasks to more strategic activities. The findings underscore the importance for organizations to invest in digital leadership development—particularly in digital literacy, strategic decision-making, and change management—while fostering a culture of innovation, collaboration, and continuous learning to sustain performance gains. However, the study's focus on Indonesian digital companies and its cross-sectional design limit broader generalizability and causal interpretation. Future research should address these limitations by employing longitudinal designs and more diverse, cross-industry, and cross-country samples, while also examining additional factors such as organizational culture, employee resilience, psychological safety, and varying leadership styles to better understand how AI-driven transformation can be effectively implemented across different contexts.

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