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The Effect of Organizational Commitment and Employee Engagement on Employee Digital Readiness in Scaffolding Organizations in Greater Jakarta

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Abstract

In the Industry 4.0 era, scaffolding organizations in Jabodetabek face technological transformation challenges, necessitating robust digital readiness among employees, driven by organizational commitment and employee engagement. This quantitative study, employing a descriptive and causal approach, analyzes these factors using Structural Equation Modeling (SEM) with Partial Least Squares (PLS) on data from 163 respondents, sampled via the Hair method from an indeterminate population of scaffolding firms. Questionnaires with 49 items assessed the variables, revealing strong employee engagement (81.41%), high organizational commitment (88.24%), and ready digital readiness (78.31%), with both commitment and engagement significantly influencing digital readiness (66.6% variance explained). These findings suggest that leaders should prioritize fostering commitment and engagement to enhance digital transformation readiness, offering practical insights for scaffolding organizations to navigate Industry 4.0 competitiveness.

Keywords: digital readiness, organizational commitment, employee engagement, scaffolding, Industry 4.0

I. Introduction

Scaffolding represents a temporary structure critical to construction projects, comprising beams, poles, and platforms to support workers, materials, and equipment at elevated heights. Its primary functions include providing safe access to challenging areas such as high walls or rooftops, while ensuring stability and safety during construction, renovation, or building maintenance activities. Historical records trace the use of scaffolding to early human efforts to erect structures beyond their physical reach. Until the late 1970s, wood and bamboo dominated as primary materials, accounting for nearly 99% of applications. Technological advancements and growing environmental awareness prompted a shift to iron, valued for its strength, ease of assembly, and reduced ecological impact. Iron has since become the standard in modern projects, reflecting the industry's adaptation to demands for efficiency and sustainability.

Demand for scaffolding in Indonesia continues to rise in parallel with the expansion of construction projects, including high-rise buildings, roads, and public infrastructure. The Indonesian Contractors Association [AKI] reports increased need for this equipment, driven by large-scale projects such as toll roads, bridges, and urban developments. The Central Statistics Agency [BPS] notes that the construction sector contributed 10.4% to Indonesia's Gross Domestic Product [GDP] in 2022, underscoring the significant economic role of scaffolding. The Ministry of Public Works and Housing [PUPR] emphasizes adherence to safety standards to prevent workplace accidents, given construction's classification as a high-risk sector. Challenges persist in small and medium-scale projects, where neglect of safety standards often heightens accident risks and diminishes operational efficiency.

Regulations define scaffolding as a temporary platform supporting workers, materials, and tools during construction, maintenance, or demolition, as stipulated in the Minister of Manpower and Transmigration Regulation No. PER-01/MEN/1980. The scaffolding rental industry thrives in major cities like Jakarta, Surabaya, and Medan, fueled by escalating construction demands. Market Research Indonesia estimates the industry's growth at 6.3% annually since 2018, reflecting robust demand for safe and reliable construction

equipment. This expansion signals strong business potential, alongside the need for innovation to meet increasingly stringent safety and efficiency standards in Indonesia's construction market.

Companies like PT XYZ anchor their vision and mission in values of integrity, trust, quality, and efficiency. Integrity manifests through commitments to honesty, transparent communication, and operational accountability. Trust prioritizes delivering consistent services that exceed customer expectations, fostering long-term relationships with clients and partners. Quality ensures products and services meet the highest standards, while efficiency focuses on cost-effective management to maintain competitiveness in a dynamic market. These values shape the company's strategic foundation, addressing construction industry needs while navigating competitive pressures and technological shifts.

The Industry 4.0 era presents technological transformation challenges, compelling companies to adapt to remain competitive. Hussey [2000] identifies drivers of change, including technological advancements, global competition, customer expectations, demographic shifts, privatization, and shareholder demands. Oktavia [2023] asserts that flexible and effective strategies prove essential for navigating complex business dynamics. The construction sector, including scaffolding, lags in adopting technologies like Internet of Things [IoT] and Enterprise Resource Planning [ERP]. This delay hampers operational efficiency and competitiveness, underscoring the urgent need for digital transformation to sustain sector growth.

The construction sector's contribution to Indonesia's GDP reached 9.88% in the first quarter of 2023, positioning it as a key economic pillar. Adoption of IoT for administrative and operational automation remains low. Famdale and Widyadana [2023] report that IoT usage in construction is limited to Building Information Modeling [51.72%], sensors [28.74%], and databases [26.44%], with social media dominating technological applications. Major barriers include high costs, user discomfort with IoT, and limited awareness of its benefits. These obstacles complicate the scaffolding industry's transition to digital systems, critical for enhancing productivity and reducing operational costs.

Manual administrative systems in scaffolding organizations generate significant inefficiencies, with operational costs 20-30% higher than those of digitized companies, according to Deloitte [2020]. PwC [2022] observes that construction firms lacking digital systems face lower profit margins, with some experiencing profit declines of up to 15% over three years. KPMG [2021] indicates that digitalization can reduce administrative time by up to 40%, enhance data accuracy, and minimize losses from manual errors. Scaffolding organizations grapple with internal challenges, such as uneven employee readiness, alongside external pressures from business competition, making digital transformation essential for maintaining competitiveness.

Digital readiness, defined as the inclination and willingness to adopt technology [Nasution et al., 2018], hinges on factors like organizational commitment and employee engagement. Organizational commitment, encompassing affective, continuance, and normative dimensions, encourages employees to support organizational change [Julita and Wan Rafaei, 2010]. Employee engagement, reflecting workers' enthusiasm, initiative, and dedication, serves as a primary driver of transformation success [Saks, 2006], as employees are fundamental to the organization and represent valuable assets that need to be supported and sustained [Dudija et al.,2024]. This study examines the influence of these factors on digital readiness among employees in scaffolding organizations in Greater Jakarta [Jabodetabek], aiming to offer practical insights for accelerating technology adoption and enhancing organizational performance amid construction industry dynamics.

This study identifies critical issues related to digital transformation in scaffolding organizations in Greater Jakarta [Jabodetabek]. Research questions are formulated as follows:

- a. What is the level of organizational commitment among employees in scaffolding organizations in Greater Jakarta?
- b. How does employee engagement manifest among employees in scaffolding organizations in Greater Jakarta?
- c. What is the level of digital readiness among employees in scaffolding organizations in Greater Jakarta?
- d. To what extent do organizational commitment and employee engagement influence digital readiness among employees in scaffolding organizations in Greater Jakarta?

II. Materials And Methods

al Conceptual Framework

A structured approach facilitates thorough investigation of research questions. The conceptual framework outlines the interconnected concepts, relationships, and processes guiding the study [Nasution et al., 2018].

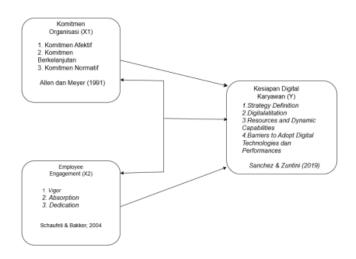


Figure-1: Conceptual Framework [Author]

This study's conceptual framework centers on the strategic context of scaffolding organizations in Jabodetabek, addressing their digital readiness challenges in the Industry 4.0 era. The framework hypothesizes that organizational commitment and employee engagement drive employees' preparedness for digital transformation. Organizational commitment, comprising affective, continuance, and normative dimensions [Allen & Meyer, 1990], reflects employees' emotional attachment, perceived costs of departure, and moral obligations to their organization. Employee engagement, encompassing vigor, dedication, and absorption [Schaufeli & Salanova, 2006], captures employees' energy, responsibility, and immersion in work roles. These factors are posited to influence digital readiness, measured through digital strategy, digital service, resources and dynamic capabilities, and performance [Sánchez & Zuntini, 2019]. The framework considers external pressures, such as industry demands for technological adoption, and internal factors, like organizational culture, to define the research problem. Hypotheses examine the individual and joint impacts of organizational commitment and employee engagement on digital readiness. Data analysis employs Structural Equation Modeling [SEM] to test these relationships, offering strategic insights for advancing digital transformation in scaffolding organizations [Ghozali & Latan, 2015].

b] Data Collection Method and Analysis

Primary data were collected through a structured questionnaire distributed online via Google Forms to 163 employees, including managers and staff, from scaffolding organizations in Jabodetabek. The questionnaire included 49 items assessing organizational commitment [18 items], employee engagement [18 items], and digital readiness [13 items], using a 5-point Likert scale [1 = strongly disagree, 5 = strongly agree] [Sugiyono, 2019]. Respondents were selected based on gender, position, tenure, and education to ensure representativeness. Secondary data were obtained from academic journals, theses, books, and electronic sources accessed through Google Scholar, ScienceDirect, ResearchGate, and other scholarly platforms, providing theoretical and contextual support for digital transformation in the construction sector [Arikunto, 2012].

Literature Review

1] Organizational Commitment

Organizational commitment represents employees' psychological bond with their organization, influencing their support for organizational objectives [Allen & Meyer, 1990]. The construct includes three dimensions:

- a] Affective Commitment: Emotional connection and alignment with organizational values.
- b] Continuance Commitment: Perceived economic or social costs of leaving the organization.
- c] Normative Commitment: Moral duty to remain loyal to the organization. Organizations need to establish a supportive work environment to create ideal conditions, demonstrating their

commitment to employee well-being, which in turn helps strengthen employees' emotional attachment to the organization [Kristanti et al., 2021]. It is essential to recognize that organizational support tends to foster positive employee behavior, which in turn reinforces organizational commitment by facilitating constructive interpersonal interactions and cultivating a strong sense of belonging within the organization [Winarno et al., 2021]. Strong organizational commitment enhances employees' readiness for organizational change, crucial for adopting digital technologies in scaffolding organizations [Mangundjaya, 2012].

2] Employee Engagement

Employee engagement denotes the level of enthusiasm, dedication, and absorption employees exhibit in their roles [Schaufeli & Salanova, 2006]. In addition to providing feedback through rewards, enhancing employee performance can also be achieved by strengthening the relationship between employees and the company, a concept known as Employee Engagement [Dwiyanti & Dudija, 2019]. The construct comprises:

- a] Vigor: Sustained energy and resilience in task performance.
- b] Dedication: Deep involvement and pride in work responsibilities.
- c] Absorption: Intense focus and immersion in work activities.

Engaged employees actively support change initiatives, fostering the adoption of digital tools in scaffolding firms [Zulkarnain & Hadiyani, 2014].

3] Digital Readiness

Digital readiness reflects the capacity of employees and organizations to adopt digital technologies [Nasution et al., 2018]. Sánchez and Zuntini [2019] identify four dimensions:

- a] Digital Strategy: Strategic plans for implementing digital transformation.
- b] Digital Service: Capability to deliver services through digital platforms.
- c] Resources and Dynamic Capabilities: Human and technological assets enabling digital adoption.
- d] Performance: Measurable outcomes of digital initiatives.

Digital readiness ensures competitiveness in Industry 4.0, particularly for scaffolding organizations transitioning from manual systems [Rafiah et al., 2022].

4] Structural Equation Modeling [SEM]

SEM is a statistical method for analyzing relationships among latent constructs, their indicators, and measurement errors [Ghozali, 2013]. Partial Least Squares SEM [PLS-SEM] supports exploratory research, accommodating non-normal data and complex models [Joseph F. Hair, 2013]. Evaluation includes:

- a] Outer Model: Assesses convergent validity [loading factors > 0.50, AVE > 0.50], discriminant validity, and reliability [Cronbach's Alpha, Composite Reliability > 0.70].
- b] Inner Model: Evaluates explanatory power [R-Square: 0.75 strong, 0.50 moderate, 0.25 weak] and significance [t-values: 1.65 at 10%, 1.96 at 5%, 2.58 at 1%] [Ghozali & Latan, 2015].

This study uses PLS-SEM via SmartPLS 4 to test hypotheses, ensuring rigorous analysis [Hutami K.P, 2022].

5] Data Analysis Techniques

- a] Descriptive Analysis: Summarizes data using percentages, means, and continua to categorize organizational commitment, employee engagement, and digital readiness levels [Tabel 3.3] [Sugiyono, 2017].
- b] Inferential Analysis: PLS-SEM examines causal relationships, with R-Square and t-values indicating model strength and significance [Ghozali & Latan, 2014].
- c] Validity and Reliability: Convergent validity [loading factors > 0.50, AVE > 0.50] and discriminant validity confirm construct distinctiveness. Composite Reliability [> 0.70] ensures instrument consistency [Hair et al., 2017].

III. Results

a. Key Findings

The core objective of this study examines how organizational commitment and employee engagement influence digital readiness among employees in scaffolding organizations in Jabodetabek, addressing Industry 4.0 imperatives [Nasution et al., 2018]. Primary data from 163 respondents, collected via Google

Forms, indicate high organizational commitment (88.24%, Very High), strong employee engagement (81.41%, High), and robust digital readiness (78.31%, High). SmartPLS analysis confirms significant impacts of organizational commitment and employee engagement on digital readiness, explaining 66.6% of its variance [Allen & Meyer, 1990; Schaufeli & Salanova, 2006].

b. Descriptive Analysis

Table 1: Organizational Commitment Dimensions

No	Dimension	Score	Percentage	Category
1	Affective Commitment	4186	90.61%	Very High
2	Continuance Commitment	4085	88.42%	Very High
3	Normative Commitment	3959	85.69%	Very High
	Total	12230	88.24%	Very High

The table presents the scores, percentages, and categories for three dimensions of organizational commitment: affective commitment, continuance commitment, and normative commitment [Allen & Meyer, 1990]. Affective commitment records a score of 4186, equivalent to 90.61%, classified as Very High. Continuance commitment achieves a score of 4085, or 88.42%, also categorized as sangat tinggi. Normative commitment obtains a score of 3959, translating to 85.69%, likewise rated Very High. The total score across all dimensions reaches 12230, yielding an overall percentage of 88.24%, which falls into the sangat tinggi category. These figures reflect the responses of 154 employees from scaffolding organizations in Jabodetabek, indicating a strong level of commitment across all measured dimensions.

Table 2: Employee Engagement Dimensions

1 4	Tubic 2. Employee Engagement Dimensions				
No	Dimension	Score	Percentage	Category	
1	Vigor	3788	81.99%	High	
2	Dedication	3760	81.39%	High	
3	Absorption	3735	80.84%	High	
	Total	11283	81.41%	High	

The table outlines the scores, percentages, and categories for three dimensions of employee engagement: vigor, dedication, and absorption [Schaufeli & Salanova, 2006]. Vigor attains a score of 3788, corresponding to 81.99%, categorized as High. Specific items include item 23 ("I persist despite difficulties") at 88.18%, rated Very High, and item 22 ("I don't give up despite challenges") at 76.23%, rated High. Dedication records a score of 3760, or 81.39%, also classified as High. Key items include item 25 ("I feel fully responsible") at 83.38%, rated Very High, and item 29 ("My work benefits others") at 78.31%, rated High. Absorption achieves a score of 3735, equating to 80.84%, categorized as High. Notable items include item 31 ("I lose track of time working") at 85.06%, rated Very High, and item 33 ("I concentrate fully") at 78.83%, rated High. The total score across dimensions is 11283, with an overall percentage of 81.41%, classified as High. These results capture the engagement levels of the same 154 respondents, reflecting consistent strength across all dimensions.

Table 3: Digital Readiness Dimensions

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No	Dimension	Score	Percentage	Category	
1	Digital Strategy	1888	81.73%	High	
2	Digital Service	1738	75.24%	High	
3	Resources and Dynamic Capabilities	1734	75.06%	High	
4	Performance	2502	81.23%	High	
	Total	7862	78.31%	High	

The table details the scores, percentages, and categories for four dimensions of digital readiness: digital strategy, digital service, resources and dynamic capabilities, and performance [Sánchez & Zuntini, 2019]. Digital strategy scores 1888, or 81.73%, categorized as High. Key items include item 39 ("Organization seeks best practices") at 84.29%, rated Very High, and item 37 ("I use provided digital tools") at 79.22%, rated High. Digital service achieves a score of 1738, equivalent to 75.24%, classified as High. Items include item 40 ("Services ordered digitally") at 77.27%, rated High, and item 41 ("Services digital in five years") at 73.64%, rated High. Resources and dynamic capabilities records a score of 1734, or 75.06%, categorized as High. Items include item 45 ("Clear change management") at 83.77%, rated High, and item 44 ("Active digital training") at 70.13%, rated High. Performance obtains a score of 2502, translating to 81.23%, classified as High. Items include item 46 ("Reduced problem-solving time") at 84.42%, rated Very High, and item 47 ("Reduced material use") at 74.29%, rated High. The total score across dimensions is 7862, yielding an overall percentage of 78.31%, categorized as High. These data represent the digital readiness levels of the 163 respondents, indicating preparedness for digital transformation across all dimensions.

c. Inferential Analysis

Inferential analysis employs Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS 4 to test causal relationships [Ghozali & Latan, 2015]. Validity and reliability tests precede structural model evaluation.

Validity Tests

Convergent Validity: All indicators achieve loading factors ≥ 0.60 , meeting validity criteria [Nasution et al., 2018].

- a. Organizational Commitment: Loading factors range from 0.605 (KO_KB_6) to 0.848 (KO_KB_4), confirming validity.
- b. Employee Engagement: Loading factors range from 0.627 (EE_V_3) to 0.831 (EE_V_5), ensuring validity.
- c. Digital Readiness: Loading factors range from 0.623 (KDK_P_4) to 0.781 (KDK_DS_1), validating all indicators.

Table 4: Outer Loading Summary (Convergent Validity)

Variable	Indicator Code	Loading Factor Range	Validity Status
Organizational Commitment (X1)	KO_KA_1 to KO_KN_6	0.605-0.848	Valid
Employee Engagement (X2)	EE_V_1 to EE_A_6	0.627–0.831	Valid
Digital Readiness (Y)	KDK_SD_1 to KDK_P_4	0.623-0.781	Valid

Discriminant Validity: Cross-loadings confirm each indicator's stronger association with its intended construct compared to others. For example, KO_KA_1 loads 0.717 on organizational commitment, higher than 0.280 on employee engagement and 0.492 on digital readiness.

Table 5: Discriminant Validity (Sample Cross-Loadings)

		<i>i</i>	
Indicator	Organizational Commitment (X1)	Employee Engagement (X2)	Digital Readiness (Y)
KO_KA_1	0.717	0.280	0.492
EE_V_1	0.376	0.684	0.425
KDK_SD_1	0.650	0.382	0.650

Reliability Tests

All constructs meet reliability criteria: Cronbach's Alpha ≥ 0.70 and Composite Reliability ≥ 0.70 .

Table 6: Reliability Metrics

Variable	Cronbach's Alpha	Composite Reliability
Organizational Commitment (X1)	0.959	0.963
Employee Engagement (X2)	0.953	0.958
Digital Readiness (Y)	0.905	0.919

Structural Model

The inner model evaluates causal relationships. R-Square is 0.666, indicating organizational commitment and employee engagement explain 66.6% of digital readiness variance, with 33.4% attributed to other factors (Table 4.20). Q-Square is 0.666, confirming high predictive relevance.

Table 7: R-Square and Q-Square

Variable	R-Square	R-Square Adjusted	Q-Square
Digital Readiness (Y)	0.666	0.662	0.666

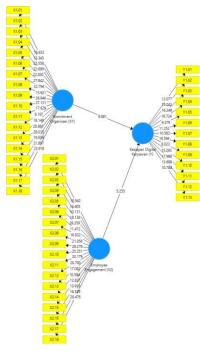


Figure-2: Structural Model (Bootstrapping)

Hypothesis testing supports both hypotheses:

- a. H1: Organizational commitment significantly influences digital readiness (p-value = 0.000, t-statistic = 9.081, path coefficient = 0.570).
- b. H2: Employee engagement significantly influences digital readiness (p-value = 0.000, t-statistic = 5.255, path coefficient = 0.348).

Table 8: Path Coefficients

Hypothesis	Effect	Original Sample	T- Statistic	P- Value	Decision
H1	X1 → Y (Organizational Commitment → Digital Readiness)	0.570	9.081	0.000	Accepted
H2	X2 → Y (Employee Engagement→ Digital Readiness)	0.348	5.255	0.000	Accepted

d. Implications

High organizational commitment fosters emotional, economic, and moral ties, enhancing digital tool adoption [Mangundjaya, 2012]. Strong employee engagement drives motivation, supporting digital skill development [Zulkarnain & Hadiyani, 2014]. The 66.6% explained variance suggests 33.4% of digital readiness stems from factors like digital literacy or leadership [Rafiah et al., 2022]. Findings align with Babu and Suneela (2023), who linked organizational commitment to digital readiness in education, and Sievert and Scholz (2017), who connected employee engagement to digital adoption.

Table 9: Implications and Recommendations

Implication	Recommendation	
High commitmen tsupports digital adoption	Foster transparency and loyalty programs [Mangundjaya, 2012].	
Strong engagement enhances skills	Implement digital training and collaboration [Zulkarnain et al., 2014].	
33.4% unexplained variance	Explore digital literacy or leadership [Rafiah et al., 2022].	
Digital readiness ensures competitiveness	Develop clear strategies and resources [Sánchez & Zuntini, 2019].	

These strategies strengthen digital transformation, ensuring scaffolding organizations' competitiveness.

IV. Discussion

The findings reveal that scaffolding organizations in Jabodetabek face a critical strategic juncture shaped by two pivotal factors: organizational commitment and employee engagement, which collectively drive digital readiness in the Industry 4.0 era [Nasution et al., 2018]. Rather than suggesting a uniform trajectory, the analysis demonstrates that achieving digital readiness spans a range of dynamic conditions, necessitating flexible rather than rigid strategic approaches. Key implications arise across the study's findings: high organizational commitment (88.24%, Very High) and strong employee engagement (81.41%, High) significantly enhance digital readiness (78.31%, High), explaining 66.6% of its variance [Allen & Meyer, 1990; Schaufeli & Salanova, 2006]. These results position organizational resilience as a capacity to adapt to varying levels of employee preparedness and technological adoption pressures, rather than a binary choice between digital success or failure. By framing digital readiness as a catalyst for iterative strategy development, this study advances organizational behavior research beyond static assessments toward actionable transformation frameworks. The methodology's distinctive contribution lies in its integration of Structural Equation Modeling (PLS-SEM) to quantify relationships, enabling leaders to translate employee dynamics into structured digital adoption protocols [Ghozali & Latan, 2015].

High organizational commitment, encompassing affective, continuance, and normative dimensions, fosters emotional, economic, and moral ties that anchor employees' willingness to embrace digital tools [Mangundjaya, 2012]. The affective commitment score (90.61%) indicates strong emotional alignment, particularly in employees' pride and desire to remain with their organizations (item 5, 92.21%). Continuance commitment (88.42%) reflects perceived costs of leaving, with employees valuing job stability (item 8, 90.65%). Normative commitment (85.69%) underscores moral obligations, driven by supportive company policies (item 18, 90.52%). These findings align with Babu and Suneela (2023), who observed that organizational commitment enhances digital readiness in educational settings, suggesting that committed employees are more likely to support technological shifts in scaffolding firms.

Strong employee engagement, characterized by vigor, dedication, and absorption, fuels motivation and resilience, critical for digital skill acquisition [Zulkarnain & Hadiyani, 2014]. The vigor dimension (81.99%) highlights employees' persistence (item 23, 88.18%), while dedication (81.39%) reflects responsibility (item 25, 83.38%). Absorption (80.84%) indicates deep immersion (item 31, 85.06%), though concentration levels are slightly lower (item 33, 78.83%). These results corroborate Sievert and Scholz (2017), who linked employee engagement to digital adoption through internal platforms, implying that engaged employees in

scaffolding organizations are primed to adopt digital technologies.

The digital readiness score (78.31%) signals preparedness across digital strategy (81.73%), digital service (75.24%), resources and dynamic capabilities (75.06%), and performance (81.23%) [Sánchez & Zuntini, 2019]. Employees actively engage with digital strategies (item 39, 84.29%) and report efficiency gains (item 46, 84.42%), though training efforts lag (item 44, 70.13%). The 66.6% explained variance suggests that 33.4% of digital readiness arises from unexamined factors, such as digital literacy or leadership [Rafiah et al., 2022]. This partial explanation underscores the need for adaptive strategies that account for diverse influences beyond commitment and engagement.

The findings highlight systemic risks of over-relying on current employee strengths without addressing gaps. Organizations excelling in digital strategy and performance risk stagnation if digital service and resources remain underdeveloped. Conversely, robust commitment and engagement offer opportunities to mitigate external pressures, such as technological disruption or market competition. Strategic agility emerges not from choosing a single pathway but from balancing investments in employee development with technological infrastructure. This approach positions scaffolding organizations to navigate Industry 4.0 uncertainties, converting employee readiness into operational competitiveness through iterative, data-driven strategies.

IV. Conclusion

The study concludes that organizational commitment in scaffolding organizations in Jabodetabek achieves a high level (88.24%), reflecting strong emotional and moral ties, while employee engagement is strong (81.41%), indicating notable enthusiasm and dedication, and digital readiness is prepared (78.31%), demonstrating readiness for digital transformation. Both organizational commitment and employee engagement significantly influence digital readiness, explaining 66.6% of its variance, with 33.4% attributed to other factors like digital literacy or leadership. Recommendations encourage management to sustain commitment through transparent communication and loyalty programs, enhance engagement with training and collaborative cultures, urge employees to independently develop digital skills, prompt future researchers to explore additional variables such as organizational culture, and advise academics to design HR training modules to elevate digital readiness in the scaffolding industry.

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