THE EFFECT OF EMPLOYEE ENGAGAMENT AND WORK MOTIVATION ON START-UP EMPLOYEE PERFORMANCE WITH WORKFORCE AGILITY AS MODERATOR

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Abstract. *This study aimed to analyze the effect of employee engagement and work motivation on employee performance with workforce agility as a moderating variable in start-up companies located in Special Region of Yogyakarta and Central Java. The sampling technique used in this study was purposive sampling, with a total of 95 respondents who met the criteria. Primary data were collected through questionnaires distributed via Google Forms, which had been tested for validity and reliability. Data analysis was conducted using the Structural Equation Modeling (SEM) approach based on Partial Least Squares (PLS) with SmartPLS 4 software. The results of the study indicate that employee engagement and work motivation have a positive and significant effect on employee performance. Workforce agility was found to serve as a moderating variable that strengthens the effect of work motivation on employee performance but weakens the effect of employee engagement on employee performance. These findings suggest that in the dynamic context of start-up environments, workforce agility plays a crucial role in enhancing the effect of work motivation on employee performance, while it may diminish the impact of employee engagement. Future research is recommended to consider additional variables such as organizational culture, job satisfaction, or work stress.*

Keywords: *Employee Engagement; Employee Performance; Work Motivation; Workforce Agility*

1. INTRODUCTION

The dynamic nature of today's business environment, driven by technological advancement, globalization, and shifting market demands, compels organizations—particularly start-ups—to continuously adapt and improve employee performance. Employee performance is a crucial factor in achieving organizational goals, as it directly affects productivity, innovation, and service quality.

Previous research has identified employee engagement and work motivation as two key internal factors that positively influence employee performance. Engaged employees tend to demonstrate emotional and cognitive involvement in their work, which leads to higher levels of dedication and productivity (Nkansah et al., 2023). Similarly, motivated employees are more likely to pursue organizational objectives with persistence and enthusiasm (Anggraini, 2024).

In fast-changing and uncertain environments like start-ups, workforce agility is becoming increasingly essential. Workforce agility refers to the ability of employees to adapt quickly, respond proactively, and remain resilient in the face of change (Muduli, 2017; Waweru, 2024). Beyond its direct effect on performance, workforce agility is also proposed to act as a moderating variable that can strengthen or weaken the influence of employee engagement and motivation on performance (Ardian et al., 2023).

Despite growing interest in these constructs, limited empirical evidence is available regarding how workforce agility moderates the relationship between engagement, motivation, and performance, especially in start-up contexts outside metropolitan areas. Regions such as the Special Region of Yogyakarta and Central Java have emerged as

significant start-up ecosystems in Indonesia (Dihni, 2022), offering a relevant context for such investigation.

This study aims to analyze the effect of employee engagement and work motivation on employee performance, and the moderating role of workforce agility. The results are expected to contribute theoretically to the development of agile human resource management and provide practical recommendations for start-up organizations in building adaptive and high-performing workforces.

2. LITERATURE REVIEW

2.1 Employee Engagement

Employee engagement is a psychological condition in which individuals are emotionally, cognitively, and physically involved in their work (Kahn, 1990). Engaged employees demonstrate enthusiasm, dedication, and a strong sense of responsibility, contributing positively to organizational performance (Bakker et al., 2002). This study adopts indicators from Yunus et al. (2023), including supervisor evaluation, teamwork, growth opportunities, work-life balance, behavioral fairness, and effective communication.

2.2 Work Motivation

Work motivation refers to the internal drive that initiates, directs, and sustains employee behavior toward achieving work goals (Robbins & Judge, 2016). According to Maslow's hierarchy of needs, motivation is influenced by five levels: physiological needs, safety, belonging, self-esteem, and self-actualization (Manutilaa et al., 2024). Motivated employees are more likely to perform optimally as they are more focused, goal-oriented, and persistent (Anggraini, 2024).

2.3 Employee Performance

Employee performance is the extent to which an employee effectively carries out assigned tasks and contributes to organizational success (Motowidlo et al., 2014). It includes both the quality and quantity of work, timeliness, efficiency, and independence (Robbins & Judge, 2016). In this study, performance is viewed as the result of individual contributions influenced by levels of engagement and motivation.

2.4 Workforce Agility

Workforce agility is the ability of employees to quickly adapt to changes, respond proactively, and maintain performance in dynamic environments (Muduli, 2017). Waweru (2024) categorizes workforce agility into four behavioral indicators: proactive, adaptive, generative, and resilient behavior. This flexibility allows employees in start-ups to cope with rapid change and sustain productivity.

2.5 Hypothesis Development

2.5.1 The effect of employee engagement on employee performance

Several previous studies have consistently shown that employee engagement has a significant and positive impact on employee performance (Nkansah et al., 2023; Hidayat, 2023). Engaged employees are more likely to contribute actively and perform better in achieving organizational goals. Based on this evidence, the following hypothesis is proposed:

H1: Employee engagement has a positive effect on employee performance.

2.5.2 The effect of work motivation on employee performance

Work motivation has been widely recognized as one of the key factors that influence employee performance in various organizational contexts. Empirical findings from Anggraini (2024) and Gandung (2024) demonstrate that higher levels of motivation are associated with improved individual performance outcomes. Therefore, the second hypothesis is formulated as follows:

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

2.5.3 The moderating role of workforce agility in the effect of employee engagement on employee performance

Recent studies suggest that the presence of workforce agility may influence the strength of the relationship between employee engagement and employee performance. Employees who are more agile tend to be more capable of translating their engagement into effective work behavior, especially in dynamic environments (Ardian et al., 2023; Korir et al., 2025). The third hypothesis is proposed:

H3: Workforce agility moderates the effect of employee engagement on employee performance.

2.5.4 The moderating role of workforce agility in the effect of work motivation on employee performance

In addition to its direct influence, workforce agility may also play a role in enhancing how motivation affects performance. Studies by Feno (2024) and Fungsiana and Zulaikha Wulandari (2024) indicate that employees with higher agility are better at utilizing their motivation to meet performance expectations in rapidly changing work environments. Therefore, the final hypothesis is proposed as follows:

H4: Workforce agility moderates the effect of work motivation on employee performance.

3. RESEARCH METHODS

This study applied a quantitative explanatory approach to analyze the effect of employee engagement and work motivation on employee performance, and to examine the moderating effect of workforce agility. The research was conducted within start-up companies located in the Special Region of Yogyakarta and Central Java, both of which have experienced notable growth in digital-based entrepreneurship.

The population consisted of employees working in start-ups across the two provinces. Since the total number of employees was unknown, the Slovin formula was used with a 10% margin of error, resulting in a sample size of 100 respondents. A purposive sampling technique was adopted, with specific criteria: (1) participants had to be currently working in a start-up company located in Yogyakarta or Central Java, and (2) have at least six months of work experience in their current role.

Data were collected through an online questionnaire using Google Forms. The instrument consisted of 40 statement items covering four variables: employee engagement (6 indicators), work motivation (5 indicators), employee performance (5 indicators), and workforce agility (4 indicators). All items were measured using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The items were adapted from previously validated research instruments and were tested for both validity and reliability prior to analysis.

The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4 software. The analysis followed a two-step process. First, the measurement model was evaluated to assess convergent validity and reliability, using indicators such as outer loadings, cronbach's alpha, and composite reliability. Second, the structural model was assessed to test the proposed hypotheses, including the interaction effect between the independent variables and the moderator. To determine the significance of the relationships, a bootstrapping procedure with 5,000 subsamples was used, generating t-statistics, p-values, and confidence intervals.

4. RESULTS AND DISCUSSION

4.1 Descriptive Statistics

Based on the demographic profile of the 95 respondents, the majority were female (54.74%), indicating that women slightly outnumber men in the start-up in Yogyakarta and Central Java. Most respondents were in the 22–25 year age group (71.58%),

reflecting a young employee demographic, which is consistent with the dynamic found in start-up environments. Regarding educational attainment, a large majority (81.05%) held a bachelor's degree, suggesting that start-ups in this region tend to recruit highly educated individuals. In terms of work experience, the largest proportion (46.32%) had been employed for 6–12 months, indicating that many employees are relatively new and possibly still in the adjustment stage. Lastly, in terms of commuting distance, 44.21% of the respondents lived 6–10 kilometers from their workplace, suggesting a moderate distance that allows for regular in-office presence while still requiring some commuting effort.

4.2 Convergent Validity

According to Setiabudhi et al. (2025), an indicator is considered valid if the outer loading is ≥ 0.70, Indicators that meet these criteria are suitable for further analysis.

Table 1. Outer Loading Result

Variable	Indicators/Items	Outer Loading	Result
Employee Engagement	EE1.1	0.866	Valid
	EE1.2	0.852	Valid
	EE2.1	0.877	Valid
	EE2.2	0.797	Valid
	EE3.1	0.815	Valid
	EE3.2	0.916	Valid
	EE4.1	0.931	Valid
	EE4.2	0.843	Valid
	EE5.1	0.890	Valid
	EE5.2	0.887	Valid
	EE6.1	0.876	Valid
	EE6.2	0.851	Valid
Work Motivation	WM1.1	0.871	Valid
	WM1.2	0.865	Valid
	WM2.1	0.842	Valid
	WM2.2	0.894	Valid
	WM3.1	0.863	Valid
	WM3.2	0.791	Valid
	WM4.1	0.831	Valid
	WM4.2	0.820	Valid
	WM5.1	0.795	Valid
	WM5.2	0.876	Valid
Workforce Agility	WFA1.1	0.875	Valid
	WFA1.2	0.806	Valid
	WFA2.1	0.808	Valid
	WFA2.2	0.795	Valid
	WFA3.1	0.871	Valid
	WFA3.2	0.881	Valid
	WFA4.1	0.852	Valid
	WFA4.2	0.885	Valid
Employee Performance	EP1.1	0.836	Valid
	EP1.2	0.779	Valid
	EP2.1	0.847	Valid
	EP2.2	0.877	Valid
	EP3.1	0.857	Valid
	EP3.2	0.893	Valid
	EP4.1	0.865	Valid
	EP4.2	0.853	Valid
	EP5.1	0.827	Valid

Variable	Indicators/Items	Outer Loading	Result
	EP5.2	0.910	Valid

(Source: Data Processing Results, 2025)

Based on the results presented in Table 1, all indicators from the variables of employee engagement, work motivation, workforce agility, and employee performance have loading factor values greater than 0.70, indicating that all items are valid.

4.3 Reliability

According to Setiabudhi et al. (2025), if the Cronbach's alpha value is greater than 0.70, it indicates that the indicators are reliable. Additionally, an indicator is considered reliable if the composite reliability value exceeds 0.70. However, a composite reliability value between 0.60 and 0.70 may still be acceptable in exploratory or early-stage research.

Table 2. Cronbach's Alpha

Variable	Cronbach's alpha	Result
Employee Engagement	0.970	Reliable
Work Motivation	0.959	Reliable
Workforce Agility	0,956	Reliable
Employee Performance	0.949	Reliable

(Source: Data Processing Results, 2025)

Table 3. Composite Reliability

Variable	Composite reliability	Result
Employee Engagement	0.971	Reliable
Work Motivation	0.964	Reliable
Workforce Agility	0.962	Reliable
Employee Performance	0.958	Reliable

(Source: Data Processing Results, 2025)

The reliability test results presented in Table 2 and Table 3 show that all constructs—Employee Engagement, Work Motivation, Workforce Agility, Employee Performance—have Cronbach's Alpha and Composite Reliability (CR) values exceeding 0.70. This indicates that each construct meets the threshold for internal consistency reliability as recommended by (Setiabudhi et al., 2025). These results confirm that the indicators used in the model consistently measure their respective latent variables and are suitable for further structural model analysis.

4.4 R Square

According to Hair et al. (2022), the R-Square (R^2) value indicates the level of variance in the dependent variable explained by the independent variables. An R^2 value of 0.75 is substantial, 0.50 is moderate, and 0.25 is weak.

Table 4. R Square

Variable Dependent	R-square	R-square adjusted
Employee Performance	0.955	0.952

(Source: Data Processing Results, 2025)

As shown in Table 4, the adjusted R^2 value for Employee Performance is 0.952, indicating a strong explanatory power. This means that Employee Engagement and Work Motivation explain 95.2% of the variance in Employee Performance. Meanwhile, the remaining 4.8% is attributed to the influence of other independent variables that were not examined in this study.

4.5 Hypothesis Test Results

4.5.1 Significance of Direct Influence and Indirect influence

According to (Setiabudhi et al., 2025), hypothesis testing in PLS-SEM uses the bootstrapping method. A hypothesis is accepted if the t-statistic > 1.96 and the p-value < 0.05, indicating a significant relationship between variables. Meanwhile, if the original sample value is positive, it can be interpreted that the independent variable has a positive effect on the dependent variable. Conversely, if the original sample value is negative, it can be concluded that the independent variable has a negative effect on the dependent variable.

Table 5. Significance of Direct Influence

Variable	Original sample	T statistics	P values	Result
EE -> EP	0.299	4.115	0.000	H1 accepted
WM -> EP	0.293	5.024	0.000	H2 accepted
EE x WFA -> EP	-0.096	1.978	0.048	H3 accepted
WM x WFA -> EP	0.125	2.218	0.027	H4 accepted

(Source: Data Processing Results, 2025)

Based on the results shown in Table 5, employee engagement (EE) and work motivation (WM) both have a significant positive effect on employee performance (EP), as shown by the original sample values of 0.299 and 0.293, respectively. These findings support H1 and H2. Additionally, workforce agility (WFA) was found to moderate the effect of EE on EP negatively (H3), with an original sample of –0.096, indicating that higher agility may weaken this effect. On the other hand, H4 is supported as well, showing that WFA positively moderates the effect of WM on EP with an original sample value of 0.125. All proposed hypotheses were accepted based on the statistical test results.

4.6 Discussion

4.6.1 H1 – The Effect of Social Media Marketing on Purchase Intention

The analysis shows that employee engagement has a positive and significant effect on employee performance, with a coefficient (original sample) of 0.299, a T-statistic of 4.115, and a P-value of 0.000. Therefore, it can be concluded that the first hypothesis in this study is accepted.

This finding is in line with the study by Hidayat (2023), which demonstrated that employee engagement has a significant impact and a positive correlation with employee performance. Additionally, Nkansah et al. (2023) also found that employee engagement is one of the variables that significantly and positively affects employee performance.

4.6.2 H2 – The Effect of Product Knowledge on Purchase Intention

The test results show that work motivation also has a positive and significant effect on employee performance, with a coefficient (original sample) of 0.293, a T-statistic of 5.024, and a P-value of 0.000. This indicates that the second hypothesis in this study is accepted.

This finding is consistent with the study by Gandung (2024), which stated that work motivation positively and significantly affects employee performance. Similarly, Anggraini (2024) also found that work motivation has a positive and significant influence on employee performance.

4.6.3 H3 – The Moderating Role of Workforce Agility in The Effect of Employee Engagement on Employee Performance

The analysis revealed that workforce agility significantly moderates the effect of employee engagement on employee performance, with a coefficient of –0.096, a T-statistic of 1.978, and a p-value of 0.048. Although statistically significant, the negative coefficient indicates that higher workforce agility weakens the positive effect of employee engagement.

This finding is consistent with previous studies such as Korir et al. (2025) and Ardian et al. (2023), which also found workforce agility to be a significant moderator. However, this result is noteworthy because agility is generally seen as a positive trait in dynamic environments. A closer look at the measurement model shows that certain indicators of employee engagement—particularly those related to coworker support and career clarity (EE2.2 and EE3.1)—have lower outer loading values than others. This suggests that employees may not fully experience social support or clear career paths, causing engagement to be more individual and short-term in nature, which reduces its impact when agility demands are high.

On the other hand, although the overall validity of the workforce agility construct is acceptable, some indicators—such as the ability to respond quickly to change (WFA2.1) and multitask effectively (WFA2.2)—have relatively lower loading values. This implies that employees may still struggle with adapting efficiently to sudden changes or managing multiple tasks simultaneously. In such contexts, high workforce agility can become an additional burden, especially for those who are already cognitively or emotionally engaged in their work. Without sufficient coworker support or career stability, agility may not complement engagement but instead strain it. Therefore, the negative moderating effect of workforce agility in this study suggests the need for organizations to balance agility with role clarity, structured systems, and career development, ensuring that employee engagement continues to have a positive effect on performance.

4.6.4 H4 – The Moderating Role of Workforce Agility in The Effect of Work Motivation on Employee Performance

The results show that workforce agility positively and significantly moderates the effect of work motivation on employee performance, with a coefficient of 0.125, a T-statistic of 2.218, and a P-value of 0.027. This indicates that workforce agility strengthens the effect of work motivation on performance. Therefore, the fourth hypothesis is accepted. Employees who are highly motivated and simultaneously possess the ability to adapt and respond quickly to change are more likely to achieve optimal performance outcomes.

This finding supports the study by Feno (2024), which showed that workforce agility significantly moderates the relationship between work motivation and employee performance. Similarly, (Fungsiana and Zulaikha Wulandari)2024) found that workforce agility significantly enhances the effect of job fit on performance. When employees feel aligned with their roles and are highly agile, they are more motivated to perform well, thereby improving overall employee performance.

CONCLUSION

The findings of this study indicate that both employee engagement and work motivation have a positive and significant effect on employee performance, confirming that employees who are engaged and motivated tend to perform better in start-up work environments. Additionally, workforce agility is found to significantly moderate both affects. Interestingly, agility weakens the effect of employee engagement on performance, suggesting that in highly agile environments, engaged employees may face challenges that reduce their performance outcomes. In contrast, workforce agility strengthens the effect of work motivation on performance, indicating that motivated employees with strong adaptive abilities are more capable of achieving optimal results. These findings highlight the importance of managing agility carefully, ensuring it supports rather than hinders employee potential.

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