

FACTORS AFFECTING EMPLOYEE PERFORMANCE IN STARTUPS UNDER VUCA CONDITIONS

Hendra Etri Gunawan¹, Arif Imam Suroso, Suhendi

School of Business, IPB University
Jl. Raya Pajajaran, Bogor 16151, Indonesia

Article history:

Received
7 February 2025

Revised
5 March 2025

Accepted
10 June 2025

Available online
31 January 2026

This is an open access article under the CC BY license (<https://creativecommons.org/licenses/by/4.0/>)



Abstract:

Background: The digital economy represents a new source of growth for many countries, including Indonesia. In Indonesia, the digital economy continues to expand, with startups serving as one of its main drivers. However, as technology-based enterprises, startups often face low business success rates due to volatile, uncertain, complex, and ambiguous (VUCA) conditions.

Purpose: This study aims to examine the relationship between firm/environment-related factors (training culture, management support, and organizational climate), job-related factors (work environment, job autonomy, and job communication), and employee-related factors (intrinsic motivation, proactivity, and adaptability) on employee performance.

Design/methodology/approach: The study was conducted from December 2024 to February 2025 by distributing questionnaires to 93 startup employees via Google Forms. The data were analyzed using Structural Equation Modeling - Partial Least Squares (SEM-PLS) with two main stages: outer model evaluation (lower-order and higher-order constructs) and inner model evaluation.

Findings/Results: The results indicate that only job-related and employee-related factors have a positive and significant impact on employee performance. Furthermore, these factors serve as key mediators in the relationship between firm/environment-related factors and employee performance.

Conclusion: Strategic priorities for enhancing employee performance include optimizing the management of both job-related and employee-related factors.

Originality/value (State of the art): This study specifically investigates the interplay between firm/environment-related, job-related, and employee-related factors and their collective impact on employee performance in startup environments. Ultimately, it aims to formulate actionable strategies for improving employee performance in startups operating under VUCA conditions, thereby contributing to broader business and organizational success.

Keywords: digital economy, employee performance, VUCA, SEM-PLS, startup environments

How to Cite:

Gunawan, H. E., Suroso, A. I., & Suhendi. (2026). Factors affecting employee performance in startups under VUCA conditions. *Jurnal Aplikasi Bisnis dan Manajemen (JABM)*, 12(1). <https://doi.org/10.17358/jabm.12.1.164>

¹ Corresponding author:

Email: hendraetrigunawan@gmail.com; arifimamsuroso@apps.ipb.ac.id

INTRODUCTION

The digital economy has emerged as a new source of growth for many countries, including Indonesia. Hinings et al. (2018) define the digital economy as business activities conducted through the creation and exchange of value, transactions, and relationships among economic actors, using the internet as the medium of exchange and operating virtually. In Indonesia, the digital economy continues to expand in value year by year. According to the e-Conomy SEA Report 2024 by Google, Temasek, and Bain & Company (2024), Indonesia's digital economy is projected to reach a Gross Merchandise Value (GMV) of \$90 billion in 2024 an increase of 13% from 2023 making it the largest GMV in Southeast Asia. This positive growth trend has been ongoing since 2018.

The expansion of the digital economy is closely tied to the growth of startups, which serve as its primary drivers. Startups are defined as technology-based pioneering firms shaped by digital, social, and economic revolutions, offering novel forms of organization and innovation to develop products that meet emerging demands (Awaya & Krishna, 2021; Skala, 2019). Indonesia ranks as the sixth-largest country in the world in terms of startup count, surpassing Germany, France, and several other major economies (StartupRanking, 2024). With the largest market share in Southeast Asia, Indonesia also boasts a young and skilled workforce in the technology sector (StartupBlink, 2023).

Despite these opportunities, startups face significant challenges under VUCA conditions. The failure rate of startups remains high up to 90% at various stages of development with around 10% failing within the first year across all industries (Rosales, 2024). Post-pandemic shifts in the economic landscape have led investors to adopt a more cautious approach, favoring ventures with higher certainty of return. As a result, investors now demand clear strategies from startups throughout the development, growth, and investment exit stages a phenomenon commonly referred to as the "tech winter." Startups also confront VUCA-related challenges stemming from changes in work patterns and workforce demographics. In the post-pandemic era, a new hybrid working model has emerged, allowing employees to work from any location at any time, enabled by technology and flexible working

conditions (Andrulli & Gerards, 2023). Additionally, generational shifts in the labor force present further challenges. Millennials (Gen Y) and Gen Z now dominate the labor market. According to Indonesia's Central Bureau of Statistics (2024), individuals aged 25–39 account for 35% of the total workforce, with this figure expected to increase. The Deloitte Global Gen Z and Millennial Survey (2024) found that these generations prioritize work-life balance, competitive compensation, opportunities for learning and growth, positive work environments, flexible hours, career advancement, and meaningful work.

Mathis and Jackson (2010), in *Human Resource Management*, and Armstrong (2012), in *A Handbook of Human Resource Management Practice*, state that employee performance is influenced by a range of factors, including firm/environment-related factors (e.g., management support, training culture, organizational climate), job-related factors (e.g., communication, autonomy, work environment), and employee-related factors (e.g., intrinsic motivation, proactivity, adaptability, skill flexibility, commitment, skill level). Building on this theoretical foundation and prior empirical research, Diamantidis and Chatzoglou (2019) developed a model that integrates these variables and conducted further studies, concluding that employee performance is both directly and indirectly shaped by the interaction of these three categories of factors and their respective sub-factors.

Previous studies have not explicitly examined how firm/environment-related, job-related, and employee-related factors interact to shape employee performance within Indonesian startups operating under VUCA conditions. Moreover, no research to date has specifically addressed the development of strategies to enhance employee performance in startup companies.

This study aims to validate and extend previous research by examining the influence of firm/environment-related factors, job-related factors, and employee-related factors on employee performance, specifically in startup companies, particularly within the context of VUCA. The study seeks to provide strategic insights that help startups enhance employee performance, ultimately contributing to improved business and organizational outcomes (Delaney & Huselid, 1996).

METHODS

The study was carried out between December 2024 and February 2025. The data utilized in this research were mainly sourced from primary data, collected directly from respondents through questionnaire responses. The participants in this study were employees of startup companies. These questionnaires were distributed

online using Google Forms and featured a 7-point Likert scale to gauge levels of agreement or disagreement with each statement. This scale was chosen for its greater sensitivity in capturing subtle variations in respondents' perceptions compared to a five-point scale, resulting in more precise and nuanced findings. The questionnaire items were designed based on operational definitions adapted from previous studies, as shown in Table 1.

Table 1. Operational variables

Variables	Definition	Reference
Firm/environment-related factors		
Management Support	To what extent does management support an employee in carrying out his work.	(Parker et al. 2006)
Training Culture	The what extent does the company considers employee training as a factor that positively influences employee performance.	(Hale, 2011)
Organizational Climate	How an employee views the work climate and in particular the quality of relationships with superiors and coworkers.	(Armstrong, 2012)
Job-related factors		
Work environment		
Managerial Affirmation	To what extent does an employee realizes that they are a valuable asset to the company from the behavior of their superiors.	(Fawcett et al. 2008)
Intrinsic Affirmations	To what extent does job design is able to give employees the idea that the work they do can make a positive and unique contribution to the company.	
Personal belonging	To what extent does the work environment meets the social needs of employees.	
Co-worker belonging	To what extent does an employee is socially connected to his or her coworkers.	
Personal competence	To what extent does an employee believes that his or her skills lead to higher levels of job performance.	
Job communication		
Performance communication	To what extent does a supervisor informs an employee about his or her level of performance.	(Armstrong, 2012; Price, 1997)
Work-related communication	To what extent does a supervisor informs employees about changes occurring in their workplace and work environment.	
Responsive capabilities	To what extent does superiors are willing to listen and respond to employee requests and questions.	
Job autonomy	To what extent does the company allows employees to work independently on various aspects of the job, taking into account the function and goals/targets of the job.	(Grant and Parker, 2009; Morgeson et al. 2005)
Employee-related factors		
Proactive ability		
Taking charge	Voluntary and constructive efforts of employees to improve company procedures in the workplace.	(Crant, 2000; Grant and Ashford, 2008; Morrison and Phelps, 1999; Parker and Collins 2010)
Voice	Makes innovative suggestions for change and recommends modifying standard procedures even when others disagree.	(LePine and Van Dyne, 2001; Parker and Collins, 2010)
Innovation	Generating new ideas or approaches and implementing them in the workplace.	(Crant, 2000; Parker and Collins, 2010)
Problem anticipation ability	Independent and anticipatory actions to prevent recurrence of work problems.	(Grant and Ashford, 2008; Parker and Collins, 2010)

Table 1. Operational variables (continue)

Variables	Definition	Reference
Environmental scanning	Actively scan the organizational environment to identify the fit between the organization and its environment.	(Parker and Collins, 2010)
Issue selling credibility	To what extent does an employee has a positive track record for raising an issue.	(Crant, 2000; Morrison and Phelps, 1999; Parker and Collins, 2010)
Issue selling willingness	To what extent does an employee is willing to devote time, energy and effort to ensure decision makers in the organization are aware of the issues at hand.	(Crant, 2000; Parker and Collins, 2010)
Feedback inquiry	Actively ask your superior for performance feedback.	(Crant, 2000; Grant and Ashford, 2008; Parker and Collins, 2010)
Feedback monitoring	Using the information obtained from the feedback obtained to monitor the work.	(Grant and Ashford, 2008; Parker and Collins, 2010)
Ability to negotiate job changes	An explicit effort to change one's job to better suit one's skills and abilities.	(Grant & Ashford, 2008; Parker & Collins, 2010)
Career initiatives	An individual's active effort to promote his or her career rather than passively responding to a given situation or job.	(Crant, 2000; Parker & Collins, 2010)
Adaptability		
Ability to handle crisis situations	React with appropriate and timely urgency in life-threatening, dangerous or emergency situations (in the workplace)	(Ployhart & Bliese, 2006; Pulakos, 2004)
Ability to handle work pressure	Remain calm when facing difficult situations or high workloads and act calmly and steadily to influence others who need guidance.	
Creative problem solving	Develop creative solutions to unusual, complex and uncertain job-related problems.	
Ability to deal with uncertainty and unexpected work situations	Be ready and easy to face unexpected events and circumstances related to work and try to apply the right solution	
Learning skills related to tasks, technology and rules	Quickly and adeptly learn new methods on how to perform previously unlearned tasks and adapt to new work processes and procedures.	
Interpersonal skills	Listens to and considers the points of view and opinions of others and is willing to change one's own opinion if necessary	
Cultural adaptability	Willing to adjust behavior or appearance in the workplace as necessary to comply with or demonstrate respect for the values and customs of others	
Intrinsic Motivation	To what extent does an employee performs work in the best way to achieve personal satisfaction	(Armstrong, 2012; Price, 1997)
Employee performance	To what extent is the productivity level of an individual employee able to meet the company's performance standards?	(Armstrong, 2012; Thompson, 2005)

This study employed non-probability sampling using a convenience sampling technique. The minimum sample size was determined based on the “10-times rule,” which states that the sample must be at least 10 times the number of independent variables in the most complex regression within the path model. With 93 respondents, this study meets the minimum requirement (90 respondents).

Respondent characteristics were categorized by gender, age, education level, job position, length of employment, startup sector, and other relevant variables. Structural Equation Modeling - Partial Least Squares (SEM-PLS) was utilized to analyze both the direct and indirect effects among variables. SEM-PLS is particularly advantageous when dealing with small sample sizes, non-normal data, or complex and nonlinear relationships (Hair et al. 2017). The analysis was conducted in two stages: evaluation of the outer model and the inner model.

The outer model evaluation assessed how well a set of observed indicators represented the latent constructs, often referred to as construct validity. This study applied a hierarchical component model consisting of two levels: lower-order constructs (dimensions) and higher-order constructs (latent variables), with a reflective-reflective measurement approach. For reflective measurements, the outer model evaluation included assessments of indicator loadings (>0.708), construct reliability (composite reliability and Cronbach's alpha >0.70), convergent validity (average variance extracted >0.5), and discriminant validity (HTMT ratio <0.90). The disjoint two-stage approach was adopted (Sarstedt et al. 2019), whereby the first stage evaluated the lower-order constructs, and the resulting latent variable scores were then used in the second stage to evaluate higher-order constructs (Becker et al. 2012). This method was chosen as the study's focus lies in higher-order estimation.

The inner model evaluation aimed to determine the significance and strength of the structural relationships and the model's predictive relevance. According to Hair et al. (2017), the structural model was evaluated by: (1) testing for collinearity with a VIF value <5 (Hair et al. 2022); (2) assessing the size and significance of the path coefficients using bootstrapping. A p-value <0.05 & <0.1 indicates significance at the 5% and 10% level. Path coefficients also indicate the direction of relationships (positive/negative) with values ranging from -1 to 1; and (3) evaluating the Coefficient of Determination (R^2), with values of 0.75, 0.50, and 0.25 indicating substantial, moderate, and weak explanatory power, respectively.

Hypothesis

Firm/Environment-Related Factors and Employee Performance

Individual and organizational factors significantly influence teleworkers' productivity. Job security, job satisfaction, flexibility, organizational commitment, and management support are key determinants (Aboelmaged & Subbaugh, 2012). Aropah et al. (2020), in a study on Indonesia's Procurement Policy Institute, found that leadership and the work environment affect employee performance, whereas management support does not. However, Diamantidis and Chatzoglou (2019) found that management support had both direct and indirect significant effects on performance,

while organizational climate and training culture had significant indirect effects.

Job-Related Factors and Employee Performance

Noe (2008) stated that job autonomy positively affects employee performance, allowing employees to work more efficiently. Morgeson et al. (2005) confirmed this finding. Ehrhart and Schneider (2016) demonstrated that the work environment influences productivity. The Case (2000) highlighted communication and performance management as key challenges in virtual settings. Price (1997) also emphasized that communication affects employee motivation and commitment.

Employee-Related Factors and Employee Performance

According to Diamantidis and Chatzoglou (2019), intrinsic motivation and adaptability directly affect performance, while proactive ability has an indirect effect. Purcell and Boxall (2017) support the influence of intrinsic motivation on performance. Employees with high proactivity often take initiative, suggest improvements, and positively influence peers. Parker and Collins (2010) and Pulakos et al. (2002) concluded that adaptability in new and uncertain environments positively influences employee performance.

This study's model includes three primary factors that directly or indirectly affect employee performance: Firm/Environment-Related Factors: training culture, management support, and organizational climate; Job-Related Factors: work environment, job autonomy, and job communication; Employee-Related Factors: intrinsic motivation, proactive ability, and adaptability.

The research hypotheses are as follows:

H1: Firm/environment-related factors are significantly associated with employee performance.

H2: Job-related factors are significantly associated with employee performance.

H3: Employee-related factors are significantly associated with employee performance

H4: Firm/environment-related factors are significantly associated with job-related factors

H5: Job-related factors are significantly associated with employee-related factors.

H6: Job-related factors are significantly associated with employee-related factors.

Based on the theoretical framework (Figure 1) and previous studies, it can be concluded that company/environment-related factors, job-related factors, and employee-related factors have a direct and/or indirect influence on employee performance. In this study, the researcher analyzes how employee performance in startups is influenced (directly and/or indirectly) by these three categories of factors.

RESULTS

The majority of respondents in this study were employed at companies implementing new work arrangements, including flexible working hours (34.41%), full Work From Anywhere (WFA)/Work From Home (12.90%), and various hybrid working models (59.14%). The gender distribution was relatively balanced, with 51.16% male and 48.39% female respondents. Most participants were members of Generation Y and Z.

In terms of educational background, the majority held a bachelor's degree (S1) at 78.49%, followed by master's degree (S2) holders at 15.05%, high school or equivalent at 4.30%, and associate degree (D3) at 2.15%. Regarding organizational roles, most respondents were in middle management positions (48.39%), followed by staff-level roles (45.16%) and top management (6.45%). The substantial representation of middle management enables a more comprehensive view of workplace policies, incorporating both top-level and employee perspectives.

Respondents' tenure varied, with the majority having worked for more than four years (45.16%), followed by 1–2 years (15.05%), 3–4 years (13.98%), 2–3 years (12.90%), and less than one year (12.90%). The startups represented in this study primarily operated in the financial technology sector (80.65%), followed by education technology (9.68%), Software as a Service (SaaS) (3.23%), e-commerce (2.15%), agriculture (agritech) (1.08%), travel and accommodation (1.08%), and other sectors (2.15%). The complete respondent characteristics are presented in Table 2.

First Stage Outer Model Evaluation

The initial stage of outer model evaluation involves assessing the relationships between questionnaire items (indicators) and their corresponding dimension constructs (lower-order constructs). This step ensures that each indicator is significantly and strongly associated with its respective construct.

The indicator loading results show that most items have loading values above 0.708, as presented in Table 3. This indicates that the majority of items are highly relevant to the dimensions being measured. The results of the convergent validity test indicate that each construct has an Average Variance Extracted (AVE) value above 0.50, as shown in Table 3. This suggests that the indicators consistently measure the same underlying construct within the model. The reliability test results further demonstrate that all variables exhibit composite reliability and Cronbach's alpha values exceeding the minimum threshold of 0.70 (Table 3), confirming that the constructs are reliable measures of the intended variables.

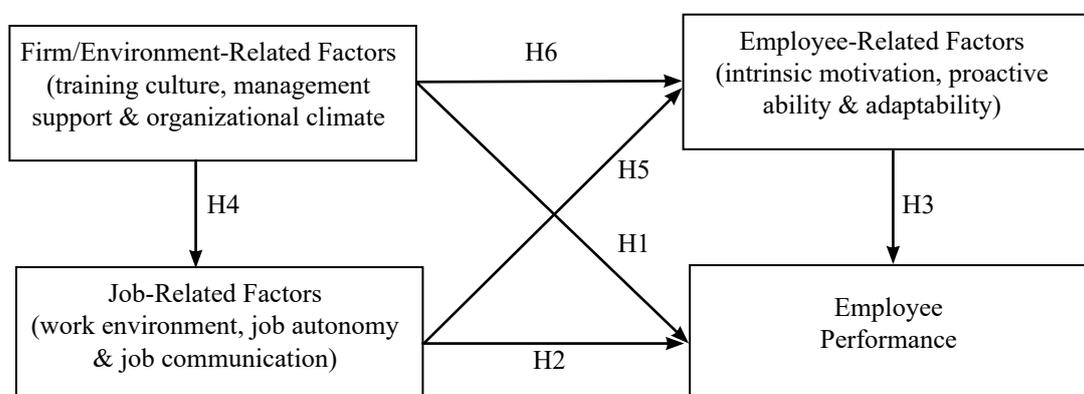


Figure 1. Research model

Table 2. Respondent characteristics

	Characteristics	Count	Percentage
Gender	Man	48	51.61%
	Woman	45	48.39%
Age	21 - 25	8	8.60%
	26 - 30	26	27.96%
	31- 35	31	33.33%
	36 - 40	21	22.58%
	>40	7	7.53%
Level of education	High School/Equivalent	4	4.30%
	3-year diploma	2	2.15%
	Bachelor degree	73	78.49%
	Strata 2	14	15.05%
WFA/WFH Types	Full WFA/WFH	6	6.45%
	1 WFA/WFH Day a Week	12	12.90%
	2 Days WFA/WFH a week	17	18.28%
	3 Days WFA/WFH a week	9	9.68%
	4 Days WFA/WFH in a week	4	4.30%
	Flexible Working Hours	32	34.41%
	Other	13	13.98%
Position in the Company	Staff/Individual Contributor	42	45.16%
	Middle Management	45	48.39%
	Top Management	6	6.45%
Length of Work in Startup Company	< 1 Year	12	12.90%
	12 years old	14	15.05%
	23 years	12	12.90%
	3-4 Years	13	13.98%
	4 Years >	42	45.16%
Startup Field	Travel and Accommodation	1	1.08%
	Education	9	9.68%
	e-commerce	2	2.15%
	Agriculture	1	1.08%
	Financial	75	80.65%
	Software as a Service (SaaS)	3	3.23%
	Other	2	2.15%

Additionally, the discriminant validity test results show that all constructs exhibit adequate discriminant validity, with Heterotrait-Monotrait (HTMT) ratios below 0.90, as presented in Table 4. This indicates that each construct distinctly represents its respective theoretical concept within the model.

Second Stage Outer Model Evaluation

The results of the second-stage indicator loading calculations show that all values exceed 0.708, as presented in Table 5. This indicates that all items

(dimensions) are highly relevant to the factors being studied. The results of the second-stage convergent validity test show that the measured constructs have adequate AVE values, all exceeding 0.50, as shown in Table 5. This indicates that the indicators consistently measure the intended constructs within the model. Furthermore, Table 5 also confirms that all variables meet the reliability criteria, with Composite Reliability and Cronbach's Alpha values above 0.70, demonstrating strong internal consistency and reliability in measuring the latent constructs.

Table 3. Loading indicator, average variance extracted (AVE), cronbach's alpha, and first stage composite reliability

Construction	Indicator	Loading Factor	AVE	Cronbach's Alpha	Composite Reliability
Training Culture (BDP)	BDP1	0.937	0.838	0.952	0.963
	BDP2	0.937			
	BDP3	0.942			
	BDP4	0.879			
	BDP5	0.881			
Management Support (DMN)	DMN1	0.898	0.793	0.913	0.939
	DMN2	0.908			
	DMN3	0.838			
	DMN4	0.917			
Organizational Climate (IOR)	IOR1	0.736	0.652	0.931	0.943
	IOR2	0.607			
	IOR3	0.893			
	IOR4	0.845			
	IOR5	0.726			
	IOR6	0.788			
	IOR7	0.844			
	IOR8	0.872			
	IOR9	0.910			
Adaptability Capacity (KAD)	KAD1	0.816	0.696	0.927	0.941
	KAD2	0.802			
	KAD3	0.837			
	KAD4	0.860			
	KAD5	0.862			
	KAD6	0.827			
	KAD7	0.834			
Employee Performance (KIN)	KIN1	0.900	0.811	0.942	0.955
	KIN2	0.887			
	KIN3	0.889			
	KIN4	0.910			
	KIN5	0.915			
Work Communication (KOP)	KOP1	0.903	0.809	0.953	0.962
	KOP2	0.879			
	KOP3	0.906			
	KOP4	0.921			
	KOP5	0.906			
	KOP6	0.879			
Proactive Ability (KPR)	mortgage1	0.768	0.572	0.924	0.936
	mortgage2	0.727			
	mortgage3	0.785			
	KPR4	0.838			
	KPR5	0.790			
	KPR6	0.826			
	KPR7	0.816			
	KPR8	0.646			
	KPR9	0.644			
	KPR10	0.727			
	KPR11	0.722			

Table 3. Loading indicator, average variance extracted (AVE), cronbach's alpha, and first stage composite reliability (Continue)

Construction	Indicator	Loading Factor	AVE	Cronbach's Alpha	Composite Reliability
Work Environment (LPK)	LPK1	0.664	0.561	0.913	0.927
	LPK2	0.753			
	LPK3	0.743			
	LPK4	0.805			
	LPK5	0.731			
	LPK6	0.759			
	LPK7	0.763			
	LPK8	0.730			
	LPK9	0.767			
	LPK10	0.764			
Intrinsic Motivation (MOI)	MOI1	0.836	0.713	0.899	0.925
	MOI2	0.753			
	MOI3	0.899			
	MOI4	0.882			
	MOI5	0.844			
Autonomy of Work (OTP)	OTP1	0.843	0.733	0.908	0.932
	OTP2	0.825			
	OTP3	0.913			
	OTP4	0.780			
	OTP5	0.912			

Table 4. Heterotrait-Monotrait Ratio (HTMT) first stage

Construct	BDP	DMN	IOR	KAD	KIN	HEAD	KPR	LPK	MOI	OTP
Training Culture (BDP)										
Management Support (DMN)	0.662									
Organizational Climate (IOR)	0.540	0.841								
Adaptability Capacity (KAD)	0.128	0.211	0.449							
Employee Performance (KIN)	0.187	0.498	0.521	0.778						
Work Communication (KOP)	0.558	0.854	0.885	0.22	0.410					
Proactive Ability (KPR)	0.343	0.514	0.655	0.846	0.753	0.540				
Work Environment (LPK)	0.458	0.717	0.828	0.672	0.777	0.713	0.832			
Intrinsic Motivation (MOI)	0.15	0.294	0.441	0.788	0.683	0.294	0.703	0.572		
Autonomy of Work (OTP)	0.306	0.665	0.879	0.37	0.505	0.745	0.592	0.688	0.475	

Table 5. Loading indicator, average variance extracted (AVE), cronbach's alpha, and second stage composite reliability

Indicators/ Dimensions	Variables	Loading Factor	AVE	Cronbach's Alpha	Composite Reliability
Adaptability Capacity (KAD)	Employee (KARY)	0.929	0.815	0.887	0.93
Proactive Ability (KPR)		0.913			
Intrinsic Motivation (MOI)		0.866			
Training Culture (BDP)	Company (PRSH)	0.737	0.769	0.851	0.909
Management Support (DMN)		0.93			
Organizational Climate (IOR)		0.925			
Work Communication (KOP)	Work (PKRJ)	0.88	0.754	0.841	0.901
Work Environment (LPK)		0.884			
Autonomy of Work (OTP)		0.866			

The discriminant validity test results, presented in Table 6, reveal that all HTMT values are below the threshold of 0.90. This suggests that the constructs are conceptually distinct from one another, and the model possesses high accuracy and credibility in capturing the relationships between constructs.

Inner Model Evaluation

The results of the multicollinearity test indicate that all Variance Inflation Factor (VIF) values are below 5, as shown in Table 7. This suggests that there are no significant multicollinearity issues among the indicators tested in this study. The indicators exhibit an acceptable level of correlation and are suitable for use in subsequent analyses.

Based on the hypothesis testing results presented in Table 7, the significance levels of the relationships between variables vary, as detailed below:

H1: Firm/Environment-Related Factors → Employee Performance

The analysis yielded a p-value of 0.330, which exceeds both the 0.05 and 0.10 significance thresholds. The

path coefficient of -0.073 indicates a weak and non-significant negative relationship. Therefore, firm/environment-related factors do not have a significant influence on employee performance. This may be due to the prevalence of hybrid or flexible working arrangements, which increase reliance on employee independence and discipline. In such settings, employees themselves become the primary drivers of performance, with firm/environmental factors playing a supportive role.

H2: Job-Related Factors → Employee Performance

The p-value of 0.071 indicates statistical significance at the 10% level ($\alpha < 0.10$). The path coefficient of 0.301 suggests a moderate positive influence. This implies that job-related factors significantly affect employee performance. A supportive work environment—characterized by fairness, respect from supervisors, and positive peer interactions—can enhance engagement and self-confidence, leading to better performance. These findings align with Dhedia and Sarkhel (2024), who emphasize that employee engagement, fostered by clear communication, recognition, and development opportunities, drives productivity and innovation—crucial for startup success.

Table 6. Heterotrait-Monotrait Ratio (HTMT) second stage

Variables	KARY	KIN	PKRJ	PRSH
Employees (KARY)				
Performance (KIN)	0.841			
Job (PKRJ)	0.689	0.674		
Company (PRSH)	0.487	0.49	0.879	

Table 7. Results of multicollinearity test & direct relationship between variables

Hypothesis	VIF	Path Coefficient	T Values	P Values	Hypothesis Test Results
H1 Company (PRSH) → Performance (KIN)	4.260	-0.073	0.441	0.330	Rejected
H2 Job (PKRJ) → Performance (KIN)	4.491	0.301	1.468	0.071**	Accepted
H3 Employees (KARY) → KIN	1.713	0.62	3.966	0.000*	Accepted
H4 Company (PRSH) → Job (PKRJ)	1.000	0.869	43.986	0.000*	Accepted
H5 Job (PKRJ) → Employees (KARY)	4.077	0.908	4.558	0.000*	Accepted
H6 Company (PRSH) → Employees (KARY)	4.077	-0.327	1.469	0.071**	Accepted

*) p-value is significant at $\alpha < 5\%$; **) p-value is significant at $\alpha < 10\%$

H3: Employee-Related Factors → Employee Performance

The p-value of 0.000 and path coefficient of 0.620 indicate a strong, statistically significant positive relationship. Employee-related factors thus significantly influence performance. Intrinsic motivation driven by a desire for personal achievement emerges as a key contributor to enhanced performance, especially in flexible or hybrid work models. This is supported by Cerasoli et al. (2014), Fahriana & Sopiah (2022), and Syamsuri et al. (2022), who highlight the importance of intrinsic motivation and adaptability in dynamic work environments.

H4: Firm/Environment-Related Factors → Job-Related Factors

The analysis shows a highly significant relationship (p-value = 0.000) and a strong path coefficient (0.869), indicating that firm/environment-related factors positively and significantly influence job-related factors. Training culture, management support, and a positive organizational climate contribute to enhanced job autonomy, open communication, and supportive working relationships. This is consistent with Soegiarto et al. (2024), who found that training programs promote job autonomy and job satisfaction, thereby enhancing performance.

H5: Job-Related Factors → Employee-Related Factors

This relationship is also highly significant (p-value = 0.000) with a strong path coefficient (0.908). A positive work environment, clear communication, and autonomy foster intrinsic motivation, proactivity, and adaptability. Deloitte's 2024 Global Gen Z and Millennial Survey indicates that these generations value purpose and clarity, which shape their motivation and initiative. This aligns with findings from Dysvik & Kuvaas (2011), Joo et al. (2010), and Zhou et al. (2019), which demonstrate that job autonomy enhances intrinsic motivation, which in turn boosts performance and development.

H6: Firm/Environment-Related Factors → Employee-Related Factors

The path coefficient of -0.327 suggests a weak negative relationship. With a t-value of 1.469 (below 1.96) and

a p-value of 0.071 (above 0.05), the relationship is not statistically significant. This may reflect a disconnect between organizational-level factors and individual employee outcomes when job-related variables are not aligned with broader company policies. In many startups, immediate supervisors and colleagues play a larger role in shaping daily experiences than overarching organizational culture, which may not be fully reflected at the team level. This interpretation is supported by subsequent mediation analysis, which shows that job-related factors mediate the relationship between firm/environment-related factors and employee-related outcomes.

Indirect Effects (Mediation Analysis)

Mediation testing was conducted to evaluate the role of intermediary variables in explaining the relationship between independent and dependent variables. This analysis helps to uncover the mechanisms through which independent variables exert influence on dependent variables.

Based on the data processing results presented in Table 8, all tested indicators show positive and statistically significant values P-values < 0.05, T-values > 1.96, and positive path coefficients indicating that the three tested paths have a significant influence, ranging from moderate to highly significant. These findings underscore the critical role of mediation in the relationships among the variables. Specifically, job-related factors (PKRJ) and employee-related factors (KARY) serve as key mediators linking firm/environment-related factors (PRSH) to employee performance (KIN). Thus, enhancing employee performance in startups requires prioritizing the effective management of job-related and employee-related factors, which function as critical mediating mechanisms.

The results of the coefficient of determination (R^2) test further support these findings. Job-related factors (PKRJ) have a strong explanatory power with an R^2 value of 0.755. Employee-related factors (KARY) demonstrate a moderate level with an R^2 of 0.416. Meanwhile, employee performance (KIN) shows an R^2 value of 0.633, indicating a moderate to strong level. This means that 63.3% of the variance in employee performance can be explained by the influencing variables included in the model.

Table 8. Results of indirect influence test

	Path Coefficient	T Values	P Values	Remark
Company (PRSH) → Job (PKRJ) → Employees (KARY)	0.789	4.352	0.000	Very Significant
Job (PKRJ) → Employees (KARY) → Performance (KIN)	0.563	2,777	0.003	Significant
Company (PRSH) → Job (PKRJ) → Employees (KARY) → Performance (KIN)	0.489	2,736	0.003	Moderate Significant

Managerial Implications

Startups should prioritize the development of employee performance improvement strategies by focusing on enhancing employee-related factors, which have a direct and positive impact on performance and serve as mediators in the relationship between job-related factors and employee performance. In addition, policy development should emphasize programs that strengthen engagement and alignment in job-related factors, which act as intermediaries between firm/environment-related factors and employee performance.

The government is expected to promote startup development policies and programs that focus on enhancing quality across firm/environment-related factors, job-related factors, and employee-related factors. Additionally, the government should strengthen its oversight and monitoring functions to ensure alignment between established programs and policies and their implementation in practice.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on the findings, it can be concluded that job-related and employee-related factors have a positive and significant effect on employee performance. Moreover, both factors play crucial intermediary roles in mediating the influence of firm/environment-related factors on employee performance.

These findings are consistent with prior research by Diamantidis and Chatzoglou (2019), while extending their framework to the context of Indonesian startups operating under VUCA conditions. However, a key distinction lies in the absence of a direct effect of firm/environment-related factors on employee performance.

This result is plausible considering that hybrid working and flexible working arrangements are more strongly influenced by task clarity and employee autonomy than by broader organizational or environmental factors. In this context, firm/environment-related factors impact employee performance indirectly, through the mediating roles of job-related and employee-related factors.

Recommendations

To improve employee performance in startup companies, strategic focus should be placed on enhancing job-related and employee-related factors, as these are the only dimensions found to have a direct and significant impact on performance. Firm/environment-related factors influence employee performance indirectly, through their effects on job-related and employee-related variables.

Startup companies should also ensure alignment between organizational-level policies (top management) and their implementation at the operational level (middle management). It is essential for middle managers to translate and execute company-wide strategies effectively, ensuring that these are perceived and experienced by employees at the individual level.

Future research could build upon this study by exploring and formulating practical alternative strategies with the involvement of startup experts. Researchers may consider employing the Analytic Hierarchy Process (AHP) as a structured and hierarchical decision-making tool.

FUNDING STATEMENT: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

CONFLICTS OF INTEREST: The author declares no conflict of interest.

REFERENCES

- Aboelmaged, M. G., & Subbaugh, S. M. El. (2012). Factors influencing perceived productivity of Egyptian teleworkers: an empirical study. *Measuring Business Excellence*, 16(2), 3–22. <https://doi.org/10.1108/13683041211230285>
- Andrulli, R., & Gerards, R. (2023). How new ways of working during COVID-19 affect employee well-being via technostress, need for recovery, and work engagement. *Computers in Human Behavior*, 139, 107560. <https://doi.org/10.1016/j.chb.2022.107560>
- Armstrong, M. (2012). *Armstrong's Handbook of Human Resource Management Practice*. Kogan Page. https://books.google.co.id/books?id=kxa_qKxclqoC
- Aropah, V. D., Sarma, M., & Sumertajaya, I. M. (2020). Factors Affecting Employee Performance during Work from Home. *International Research Journal of Business Studies*, 13(2), 201–214. <https://doi.org/10.21632/IRJBS.13.2.201-214>
- Awaya, Y., & Krishna, V. (2021). Startups and Upstarts: Disadvantageous Information in R&D. *Journal of Political Economy*, 129(2), 534–569. <https://doi.org/10.1086/711953>
- Badan Pusat Statistik. (2024). Keadaan Angkatan Kerja di Indonesia Februari 2024.
- Becker, J. M., Klein, K., & Wetzels, M. (2012). Hierarchical Latent Variable Models in PLS-SEM: Guidelines for Using Reflective-Formative Type Models. *Long Range Planning*, 45(5–6), 359–394. <https://doi.org/10.1016/J.LRP.2012.10.001>
- Cascio, W. F. (2000). Managing a virtual workplace. *Academy of Management Perspectives*, 14(3), 81–90. <https://doi.org/10.5465/ame.2000.4468068>
- Cerasoli, C. P., Nicklin, J. M., & Ford, M. T. (2014). Intrinsic motivation and extrinsic incentives jointly predict performance: A 40-year meta-analysis. *Psychological Bulletin*, 140(4), 980–1008. <https://doi.org/10.1037/a0035661>
- Crant, J. M. (2000). Proactive Behavior in Organizations. *Journal of Management*, 26(3), 435–462. <https://doi.org/10.1177/014920630002600304>
- Delaney, J. T., & Huselid, M. A. (1996). The impact of human resource management practices on perceptions of organizational performance. *Academy of Management Journal*, 39(4), 949–969. <https://doi.org/10.2307/256718>
- Deloitte Touche Tohmatsu Limited. (2024). 2024 Gen Z and Millennial Survey: Living and working with purpose in a transforming world.
- Diamantidis, A. D., & Chatzoglou, P. (2019). Factors affecting employee performance: an empirical approach. *International Journal of Productivity and Performance Management*, 68(1), 171–193. <https://doi.org/10.1108/IJPPM-01-2018-0012>
- Dysvik, A., & Kuvaas, B. (2011). Intrinsic motivation as a moderator on the relationship between perceived job autonomy and work performance. *European Journal of Work and Organizational Psychology*, 20(3), 367–387. <https://doi.org/10.1080/13594321003590630>
- Ehrhart, M. G., & Schneider, B. (2016). Organizational Climate and Culture. In *Oxford Research Encyclopedia of Psychology*. Oxford University Press. <https://doi.org/10.1093/acrefore/9780190236557.013.3>
- Fahriana, C., & Sopiah. (2022). The influence of work motivation on employee performance. *Asian Journal of Economics and Business Management*, 1(3), 229–233. <https://doi.org/10.53402/ajebm.v1i3.237>
- Fawcett, S. E., Brau, J. C., Rhoads, G. K., Whitlark, D., & Fawcett, A. M. (2008). Spirituality and Organizational Culture: Cultivating the ABCs of an Inspiring Workplace. *International Journal of Public Administration*, 31(4), 420–438. <https://doi.org/10.1080/01900690701590819>
- Google, Temasek, & Bain & Company. (2024). e-Conomy SEA 2024 report: Indonesia.
- Grant, A. M., & Ashford, S. J. (2008). The dynamics of proactivity at work. *Research in Organizational Behavior*, 28, 3–34. <https://doi.org/10.1016/j.riob.2008.04.002>
- Grant, A. M., & Parker, S. K. (2009). Redesigning Work Design Theories: The Rise of Relational and Proactive Perspectives. *The Academy of Management Annals*, 3(1), 317–375. <https://doi.org/10.1080/19416520903047327>
- Hair, J. F., Babin, B. J., Anderson, R. E., & Black, W. C. (2022). *Multivariate Data Analysis*. Cengage Learning. <https://books.google.co.id/books?id=PONXEAAAQBAJ>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Thousand Oaks. Sage, 165.
- Hale, J. A. . (2011). Performance-based evaluation : tools and techniques to measure the impact of

- training. 291. <https://www.wiley.com/en-us/Performance-Based+Evaluation%3A+Tools+and+Techniques+to+Measure+the+Impact+of+Training-p-9781118104088>
- Hinings, B., Gegenhuber, T., & Greenwood, R. (2018). Digital innovation and transformation: An institutional perspective. *Information and Organization*, 28(1), 52–61. <https://doi.org/10.1016/j.infoandorg.2018.02.004>
- Joo, B. (Brian), Jeung, C., & Yoon, H. J. (2010). Investigating the influences of core self-evaluations, job autonomy, and intrinsic motivation on in-role job performance. *Human Resource Development Quarterly*, 21(4), 353–371. <https://doi.org/10.1002/hrdq.20053>
- Khoshnaw, S., & Alavi, H. (2020). Examining the Interrelation Between Job Autonomy and Job Performance: A Critical Literature Review. *Multidisciplinary Aspects of Production Engineering*, 3(1), 606–616. <https://doi.org/10.2478/mape-2020-0051>
- LePine, J. A., & Van Dyne, L. (2001). Voice and cooperative behavior as contrasting forms of contextual performance: Evidence of differential relationships with Big Five personality characteristics and cognitive ability. *Journal of Applied Psychology*, 86(2), 326–336. <https://doi.org/10.1037/0021-9010.86.2.326>
- Mathis, R. L., & Jackson, J. H. (2010). *Human Resource Management*. Cengage Learning. <https://books.google.co.id/books?id=SKqkQzzy-38C>
- Morgeson, F. P., Delaney-Klinger, K., & Hemingway, M. A. (2005). The importance of job autonomy, cognitive ability, and job-related skill for predicting role breadth and job performance. *Journal of Applied Psychology*, 90(2), 399–406. <https://doi.org/10.1037/0021-9010.90.2.399>
- Morrison, E. W., & Phelps, C. C. (1999). TAKING CHARGE AT WORK: EXTRAROLE EFFORTS TO INITIATE WORKPLACE CHANGE. *Academy of Management Journal*, 42(4), 403–419. <https://doi.org/10.2307/257011>
- Noe, R. A. (2008). *Human Resource Management: Gaining a Competitive Advantage*. McGraw-Hill. <https://books.google.co.id/books?id=U6UbPwAACAAJ>
- Parker, S. K., & Collins, C. G. (2010). Taking Stock: Integrating and Differentiating Multiple Proactive Behaviors. *Journal of Management*, 36(3), 633–662. <https://doi.org/10.1177/0149206308321554>
- Parker, S. K., Williams, H. M., & Turner, N. (2006). Modeling the antecedents of proactive behavior at work. *Journal of Applied Psychology*, 91(3), 636–652. <https://doi.org/10.1037/0021-9010.91.3.636>
- Ployhart, R., & Bliese, P. (2006). Individual Adaptability (I-ADAPT) Theory: Conceptualizing the Antecedents, Consequences, and Measurement of Individual Differences in Adaptability. In *Understanding Adaptability: A Prerequisite for Effective Performance within Complex Environments* (pp. 3–39). Elsevier. [https://doi.org/10.1016/S1479-3601\(05\)06001-7](https://doi.org/10.1016/S1479-3601(05)06001-7)
- Price, J. L. (1997). Handbook of organizational measurement. *International Journal of Manpower*, 18(4/5/6), 305–558. <https://doi.org/10.1108/01437729710182260/FULL/PDF>
- Pulakos, E. D. (2004). *Performance Management: A Roadmap for Developing, Implementing and Evaluating Performance Management Systems*. SHRM Foundation. <https://books.google.co.id/books?id=mOTktwAACAAJ>
- Pulakos, E. D., Schmitt, N., Dorsey, D. W., Arad, S., Hedge, J. W., & Borman, W. C. (2002). Predicting Adaptive Performance: Further Tests of a Model of Adaptability. *Human Performance*, 15(4), 299–323. https://doi.org/10.1207/S15327043HUP1504_01
- Purcell, J., & Boxall, P. (2017). *Strategy and Human Resource Management*. Bloomsbury Publishing. <https://books.google.co.id/books?id=oCVHEAAQBAJ>
- Rosales. (2024, September). Startup Failure Statistics 2025: How Many Startups Fail? <https://joingenius.com/statistics/how-many-startups-fail/>
- Sachin Atmaram Dhedia, & Dr. Banibrat Sarkhel. (2024). EMPLOYEE ENGAGEMENT PRACTICES AND THEIR IMPACT ON STARTUP GROWTH: PERCEPTION OF AHMEDABAD ENTREPRENEURS. *International Education and Research Journal*, 10(6). <https://doi.org/10.21276/IERJ24190578086363>
- Sarstedt, M., Hair, J. F., Cheah, J. H., Becker, J. M., & Ringle, C. M. (2019). How to specify, estimate, and validate higher-order constructs in PLS-SEM. *Australasian Marketing Journal (AMJ)*, 27(3), 197–211. <https://doi.org/10.1016/J.AUSMJ.2019.05.003>
- Skala, A. (2019). Digital Startups in Transition Economies. *Digital Startups in Transition Economies*. <https://doi.org/10.1007/978-3-030->

01500-8

- Soegiarto, I., Sihite, M., & Usmany, P. (2024). The Influence of Training and Development Programs, Job Autonomy, and Organizational Culture on Employee Job Satisfaction and Performance. *International Journal of Business, Law, and Education*, 5(2), 1577–1583. <https://doi.org/10.56442/ijble.v5i2.596>
- StartupBlink. (2023, June 14). An overview of the Global Startup Ecosystem Index 2023. <https://www.startupblink.com/blog/global-startup-ecosystem-index/>
- StartupRangking. (2024). Countries - With the top startups worldwide | Startup Ranking. <https://www.startupranking.com/countries>
- Syamsuri, Abd. R., Halim, Abd., & Siddik, E. (2022). Determination of Employee Performance With Adaptability, Extraversion Personality, And Self-Efficacy. *Journal Of Management Analytical and Solution (JoMAS)*, 2(2). <https://doi.org/10.32734/jomas.v2i2.8738>
- Thompson, J. A. (2005). Proactive personality and job performance: A social capital perspective. *Journal of Applied Psychology*, 90(5), 1011–1017. <https://doi.org/10.1037/0021-9010.90.5.1011>
- Zhou, Q., Li, Q., & Gong, S. (2019). How Job Autonomy Promotes Employee's Sustainable Development? A Moderated Mediation Model. *Sustainability*, 11(22), 6445. <https://doi.org/10.3390/su11226445>