

Perceived Organizational Support as a Mediator of HRM Practices on Retention and Engagement in Indonesian Start-ups

*The Impact of
Retention and
Engagement*

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ABSTRACT

Indonesian start-up face high turnover and engagement challenges, making effective human resource management crucial for success. This study explores how digital human resource management practices, psychological empowerment, job flexibility, and career development influence employee retention and work engagement, with perceived organizational support as a mediator. Using a quantitative approach, we surveyed 215 employees from technology and e-commerce start-up in Jakarta, Bandung, and Yogyakarta, employing Structural Equation Modeling-Partial Least Squares for analysis. The findings show that digital human resource management practices, psychological empowerment, job flexibility, and career development positively impact perceived organizational support, which in turn enhances retention and engagement, with a stronger effect on engagement. These results, grounded in Social Exchange Theory, highlight the importance of fostering a supportive workplace to boost employee commitment. However, the study's focus on urban tech start-up limits its applicability to other sectors. Future research could explore diverse industries or longitudinal designs. This study offers startup leaders insights into building strategies that strengthen employee loyalty and enthusiasm in Indonesia's dynamic startup ecosystem.

Keywords: *Career Development, Digital HRM Practices, Employee Engagement, Job Flexibility, Perceived Organizational Support, Psychological Empowerment, Work Retention.*

ABSTRAK

Startup Indonesia menghadapi tantangan pergantian karyawan dan keterlibatan yang tinggi, sehingga manajemen sumber daya manusia yang efektif krusial bagi kesuksesan. Studi ini mengeksplorasi bagaimana praktik manajemen sumber daya manusia digital, pemberdayaan psikologis, fleksibilitas kerja, dan pengembangan karier memengaruhi retensi dan keterlibatan kerja karyawan, dengan dukungan organisasi yang dirasakan sebagai mediator. Dengan menggunakan pendekatan kuantitatif, kami mensurvei 215 karyawan dari startup teknologi dan e-commerce di Jakarta, Bandung, dan Yogyakarta, menggunakan Structural Equation Modeling-Partial Least Squares untuk analisis. Temuan menunjukkan bahwa praktik manajemen sumber daya manusia digital, pemberdayaan psikologis, fleksibilitas kerja, dan pengembangan karier berdampak positif terhadap dukungan organisasi yang dirasakan, yang pada gilirannya meningkatkan retensi dan keterlibatan, dengan efek yang lebih kuat pada keterlibatan. Hasil ini, yang didasarkan pada Teori

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Pertukaran Sosial, menyoroti pentingnya membina tempat kerja yang suportif untuk meningkatkan komitmen karyawan. Namun, fokus studi ini pada startup teknologi perkotaan membatasi penerapannya pada sektor lain. Penelitian di masa mendatang dapat mengeksplorasi beragam industri atau desain longitudinal. Studi ini menawarkan wawasan bagi para pemimpin startup dalam membangun strategi yang memperkuat loyalitas dan antusiasme karyawan dalam ekosistem startup Indonesia yang dinamis.

Kata kunci: Pengembangan Karir, Praktik HRM Digital, Keterlibatan Karyawan, Fleksibilitas Pekerjaan, Dukungan Organisasi yang Dirasakan, Pemberdayaan Psikologis, Retensi Kerja.

INTRODUCTION

The rapid growth of start-up companies in Indonesia has transformed the job market, fostering dynamic work cultures that prioritize innovation and adaptability. According to Judijanto (2024), Indonesia's digital start-up ecosystem has expanded significantly, with over 2,600 start-ups by 2023, predominantly in the technology and e-commerce sectors. However, this growth introduces challenges in retaining talent and sustaining employee engagement, critical for maintaining competitive advantage and ensuring long-term organizational success (Paul & Vincent, 2018). High turnover rates, often exceeding 20% annually in Indonesian start-ups, coupled with intense competition and resource constraints, underscore the need for effective Human Resource Management (e-HRM) strategies (Febrina & Tewu, 2023). Digital HRM or e-HRM, defined as the use of technology to streamline HR functions like recruitment and performance management, has emerged as a transformative solution to enhance efficiency and employee satisfaction (Halid et al., 2020; Dihan et al., 2024). Similarly, psychological empowerment, job flexibility, and career development are pivotal in fostering a supportive workplace, yet their integration with Perceived Organizational Support (POS) remains underexplored in the Indonesian startup context (Astuti et al., 2023; Yasmin et al., 2024).

Despite advancements in HRM practices, a significant research gap exists in understanding how e-HRM, psychological empowerment, job flexibility, and career development collectively influence employee outcomes through POS in Indonesian start-up. According to Guoqiang and Bhaumik (2024), while flexible work arrangements enhance retention, their effectiveness depends on employees' perceptions of organizational support, which has not been extensively studied in resource-constrained startup environments. Similarly, Bondarouk et al. (2017) highlight that e-HRM improves transparency, but its mediating role via POS in dynamic settings like Indonesia's startup ecosystem is underexamined. Furthermore, Krishnaveni and Monica (2018) note that inconsistent HRM policy implementation in start-ups often undermines empowerment initiatives, yet few studies integrate these factors with POS to predict retention and engagement. This gap is critical, as start-ups face unique challenges like volatile markets and high employee expectations, necessitating tailored HRM strategies (Rozas & Er, 2024; Priya & Jayalakshmi, 2025). Social Exchange Theory provides a framework, suggesting that supportive HRM practices foster reciprocal commitment, but empirical evidence in Indonesia's start-up context is limited (Blau, 1964).

Employee retention and work engagement are vital for startup sustainability, as disengaged employees and high turnover disrupt team synergy and increase costs (Hom et al., 2019; Chaudhary & Sharma, 2024). e-HRM facilitates automated processes, enabling data-driven performance management and personalized development, which enhance job satisfaction (Yulianto & Madiistriyatno, 2023; Puspita, 2024). Psychological empowerment, encompassing autonomy and meaningful work, boosts commitment, while flexible work arrangements, such as remote work, improve work-life balance (Spreitzer, 1995; Richman et al., 2008; Andrade et al., 2023; Yang & Oh, 2024). Career development opportunities align individual and organizational goals, reducing turnover (Gaffney, 2005; Chornoivan, 2023). POS, reflecting employees' belief that their organization values their contributions, mediates these relationships, enhancing loyalty

and engagement (Eisenberger et al., 1986; Ramadhani & Mubarak, 2023). However, challenges like policy misalignment or blurred work-life boundaries in flexible arrangements persist.

This study aims to investigate the impact of e-HRM practices, psychological empowerment, job flexibility, and career development on work engagement and employee retention in Indonesian start-ups, with POS as a mediator. By addressing the identified research gap, it seeks to provide evidence-based insights for developing HRM strategies that enhance employee satisfaction and organizational performance. The focus on Indonesian start-ups, particularly in the technology and e-commerce sectors, responds to the unique challenges of high turnover and resource constraints (Darmayanti et al., 2024). This research will contribute to both theory and practice by validating Social Exchange Theory in a dynamic context and offering actionable recommendations for startup leaders to foster a supportive work environment (Conway, 2015; Piter & Arief, 2023).

LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT

HRM Practices and POS on Employee Outcomes

Employee retention and work engagement are pivotal for start-ups sustainability, particularly in Indonesia's dynamic start-up ecosystem. Retention minimizes turnover costs and ensures team stability, while engagement, characterized by vigor, dedication, and absorption, enhances productivity (Bakker & Demerouti, 2008). According to Ramachandran and Prasad (2022), retention is driven by supportive management and career opportunities, critical in Indonesia, where start-ups face high turnover rates of over 20% annually (Febrina & Tewu, 2023). Engagement fosters organizational commitment, especially in resource-constrained settings (Yasmin et al., 2024). However, inconsistent HRM practices often undermine these outcomes in start-ups (Shivaraj, 2021).

Digital HRM practices leverage technology for efficient recruitment, performance management, and employee development. According to Bondarouk et al. (2017), e-HRM enhances transparency, fostering POS by signaling organizational care. In Indonesian start-ups, AI-driven hiring and cloud-based systems improve job satisfaction (Halid et al., 2020; Puspita, 2024). Psychological empowerment, encompassing meaning, competence, self-determination, and impact, promotes autonomy (Spreitzer, 1995). Studies by Choudhury and Giri (2013) show that empowered employees exhibit greater commitment, strengthening POS. Yet, misalignment between managerial and employee expectations can limit empowerment's impact (Srivastava & Singh, 2008).

Job flexibility, such as teleworking, supports work-life balance, vital in post-COVID-19 start-ups (Andrade et al., 2023). Career development through training aligns individual and organizational goals, reducing turnover (Gaffney, 2005; Chornoivan, 2023). POS, reflecting employees' belief that their organization values their contributions, directly enhances retention and engagement (Eisenberger et al., 1986). In Indonesia, POS is crucial due to high employee expectations (Ramadhani & Mubarak, 2023). Collectively, e-HRM, empowerment, flexibility, and career development strengthen POS, driving retention and engagement. Thus, we propose:

H1: Digital HRM practices have a positive and significant effect on perceived organizational support.

H2: Psychological empowerment has a positive and significant effect on perceived organizational support.

H3: Job flexibility has a positive and significant effect on perceived organizational support.

H4: Career development has a positive and significant effect on perceived organizational support.

H5: Perceived Organizational Support has a positive and significant effect on employee retention.

H6: Perceived Organizational Support has a positive and significant effect on work engagement.

H7: Employee retention has a positive and significant effect on work engagement.

Mediating Role of POS in HRM Practices and Employee Outcomes

Perceived Organizational Support (POS) mediates the relationship between HRM practices and employee outcomes in a start-up. Social Exchange Theory suggests that supportive practices foster reciprocal commitment through POS (Blau, 1964). According to Falahat et al. (2020), POS enhances the impact of institutional support on performance, a dynamic relevant to Indonesian start-ups facing resource constraints. Digital HRM practices, like real-time feedback systems, indirectly improve retention and engagement via POS, though inconsistent implementation may weaken effects (Yulianto & Madiistriyatno, 2023; Dihan et al., 2024). Over-reliance on digital tools can reduce personal interaction, potentially diminishing POS.

Psychological empowerment indirectly enhances retention and engagement through POS by fostering autonomy and value (Daily et al., 2012; Yang & Oh, 2024). In Indonesian start-up, empowerment is vital due to diverse roles, but cultural differences may limit its effectiveness (Aziza & Nadia, 2023). Job flexibility, including remote work, strengthens POS by improving work-life balance, yet blurred work-life boundaries can counteract benefits (Lott, 2015). Career development programs, such as mentoring, signal organizational investment, enhancing POS (Hyden et al., 2015; Malik et al., 2022). In Indonesia, underdeveloped career programs highlight a gap (Rozas & Er, 2024).

POS reinforces employees' sense of being valued, critical in high-pressure startup environments (Conway, 2015; Vigazi & Rino, 2023). Retention further drives engagement, as loyal employees invest emotionally in their work (Hom et al., 2017). However, variations across industries or demographics warrant further exploration (Sari et al., 2024). Thus, we propose:

H8: Digital HRM practices have a positive and significant effect on employee retention through perceived organizational support.

H9: Digital HRM practices have a positive and significant effect on work engagement through perceived organizational support.

H10: Psychological empowerment has a positive and significant effect on employee retention through perceived organizational support.

H11: Psychological empowerment has a positive and significant effect on work engagement through perceived organizational support.

H12: Job flexibility has a positive and significant effect on employee retention through perceived organizational support.

H13: Job flexibility has a positive and significant effect on work engagement through perceived organizational support.

H14: Career development has a positive and significant effect on employee retention through perceived organizational support.

H15: Career development has a positive and significant effect on work engagement through perceived organizational support.

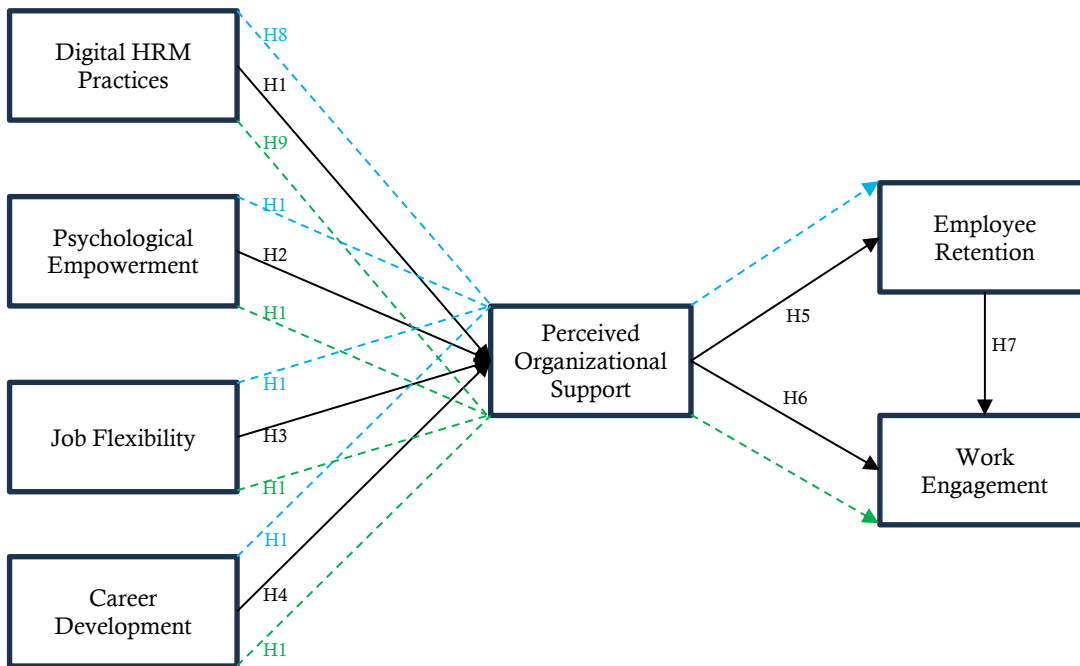


Figure 1. Research Framework

The research framework integrates digital HRM practices, psychological empowerment, job flexibility, and career development as antecedents of POS, which mediates their effects on employee retention and work engagement. Grounded in Social Exchange Theory, the framework posits that supportive HRM practices foster POS, driving positive employee outcomes (Blau, 1964; Eisenberger et al., 1986). Figure 1 illustrates these relationships, depicting direct effects (H1–H7) and mediated effects (H8–H15) in the context of Indonesian start-up.

RESEARCH METHOD

This study adopted a quantitative approach with a cross-sectional survey design to explore the relationships between HRM practices, POS, employee retention, and work engagement in Indonesian start-up. We targeted employees from technology and e-commerce start-ups, chosen for their rapid growth and significant retention challenges. The population consisted of employees who had worked at their startup for at least 6 months, as this duration allows them to experience the organization’s culture and HRM practices. A total of 215 employees from 12 start-ups in Jakarta, Bandung, and Yogyakarta participated, reflecting key hubs of Indonesia’s startup ecosystem.

We used purposive sampling to ensure participants met the study’s criteria. Start-ups were selected based on specific requirements: they had to be operational for at least 2 years and employ more than 20 staff, ensuring organizational stability. To reduce bias in purposive sampling, we included a mix of industries like e-commerce, edtech, and fintech, and ensured respondents came from various job levels, from entry-level to managerial. Data were collected through an online survey using a 5-point Likert scale, measuring variables such as digital HRM practices, psychological empowerment, job flexibility, career development, POS, retention, and engagement. The instruments were adapted from established sources, like Spreitzer (1995) for psychological empowerment and Eisenberger et al. (1986) for POS, with adjustments to fit the Indonesian startup context.

Before the main survey, we conducted a pilot test with 30 startup employees in Jakarta to check the instruments’ validity and reliability. The pilot showed Cronbach’s Alpha values above 0.7 for all variables, confirming strong reliability. The main survey ran from January to March 2023, with an 82% response rate from 262 distributed questionnaires. We analyzed the data using Structural Equation Modeling-Partial Least Squares (SEM-PLS) with SmartPLS 3, chosen for its ability to handle complex models with moderate

sample sizes. Convergent and discriminant validity were assessed using criteria from Henseler et al. (2015) to ensure the measurement model’s quality.

This approach allowed us to rigorously test the direct and mediated relationships in our research framework. By focusing on tech and e-commerce start-ups, the findings aim to be relevant to Indonesia’s startup scene, though limitations like sample size and geographic focus may affect broader generalization. This methodology provides a solid foundation for analyzing POS as a mediator between HRM practices and employee outcomes.

RESULTS

This study presents the findings from a survey of 215 employees across 12 technology and e-commerce start-ups in Indonesia, analyzing the relationships between digital HRM practices, psychological empowerment, job flexibility, career development, POS, employee retention, and work engagement. We used SEM-PLS with SmartPLS 3 to test the proposed hypotheses (H1–H15), focusing on direct and mediated effects. The results, detailed below, include respondent demographics, measurement model evaluation, and structural model outcomes, supported by statistical metrics like R², f², and Q². Demographic characteristics of the respondents were analyzed to identify the nature of the sample. A total of 215 respondents participated in the study. Their demographic information is provided in Table 1.

Table 1. Respondents’ Demographic

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	138	64.2%
	Female	77	35.8%
Age	20–29 years	102	47.4%
	30–39 years	89	41.4%
	40–49 years	24	11.2%
Education Level	Bachelor’s Degree	162	75.3%
	Master’s Degree	53	24.7%
Job Tenure	Less than 1 year	39	18.1%
	1–3 years	121	56.3%
	More than 3 years	55	25.6%
Industry	Technology	89	41.4%
	E-commerce	62	28.8%
	Financial Services	36	16.7%
	Others	28	13.0%

Table 1 shows that the majority of respondents were male (64.2%), a reflection of gender imbalance that is consistent with the general trend of employment in start-ups. The age of the majority of respondents was between 20-39 years (88.8%), a reflection of the youthfulness workforce characteristic prevalent in start-ups. Educationally, the majority of the respondents (75.3%) were Bachelor’s degree holders, in accordance with the educational requirements of being employed in start-up roles. More than half of the respondents (56.3%) have been working in their organizations for 1-3 years, indicating the dynamic nature of working in start-ups. Representation by industry is led by the technology and e-commerce industries (70.2%), in accordance with these sectors’ predominance in Indonesia’s start-up scene.

Outer model evaluation checks the validity and reliability of the measurement model. Outer model evaluation was conducted in this study using the SmartPLS 3 software, with the following being considered: internal consistency, convergent validity, and discriminant validity. Internal consistency reliability is measured by Cronbach’s Alpha (α) and Composite Reliability (CR), both of which are needed to ascertain the reliability of the constructs in the model (J. F. Hair et al., 2019). The cut-off points for Cronbach’s Alpha and Composite Reliability to be acceptable are 0.70 and above. As evident from the results, all the constructs have Cronbach’s Alpha and Composite Reliability values above 0.70, indicating adequate internal consistency. The values for all the constructs are

as follows: Digital HRM Practices (α : 0.895, CR: 0.911), Psychological Empowerment (α : 0.877, CR: 0.904), Job Flexibility (α : 0.852, CR: 0.884), Career Development (α : 0.866, CR: 0.898), Perceived Organizational Support (α : 0.889, CR: 0.911), Employee Retention (α : 0.831, CR: 0.862), and Work Engagement (α : 0.845, CR: 0.872).

Convergent validity is assessed by Average Variance Extracted (AVE), which estimates the amount of variance in indicators accounted for by latent constructs. For convergent validity, the AVE value should be higher than 0.50. It is evident from the results that all constructs have achieved the AVE threshold (≥ 0.50) (J. F. Hair et al., 2019), indicating good convergent validity and that the constructs explain sufficient variance from their respective indicators. AVE values of all the constructs are as follows: Digital HRM Practices (0.681), Psychological Empowerment (0.704), Job Flexibility (0.726), Career Development (0.712), Perceived Organizational Support (0.745), Employee Retention (0.698), and Work Engagement (0.711).

The loading factor (or outer loadings) is the relationship of the observed indicator (item) to the latent construct (factor). The loading factor needs to be greater than 0.70 for indicators to be significant (J. Hair & Alamer, 2022). In this study, the loading factors were checked in order to find out each indicator's contribution to its construct.

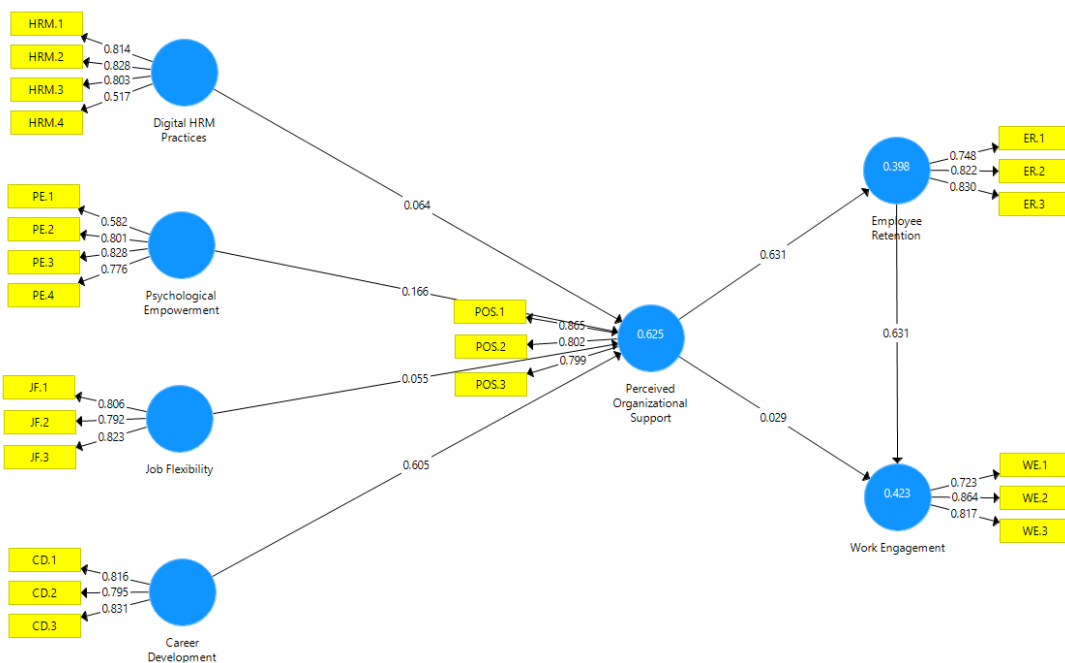


Figure 2. Loading Factor

The loading factors of all the constructs are greater than the threshold value, as indicated in Figure 2, which is 0.70, such that each indicator applied to measure the construct is important and reflects the overall construct validity. Digital HRM Practices (HRM1, HRM2, HRM3, HRM4), Psychological Empowerment (PE1, PE2, PE3, PE4), Job Flexibility (JF1, JF2, JF3), Career Development (CD1, CD2, CD3), Perceived Organizational Support (POS1, POS2, POS3), Employee Retention (ER1, ER2, ER3), and Work Engagement (WE1, WE2, WE3) all have factor loadings above 0.70, indicating that all the constructs are highly measured. The indicators, therefore, are stable and usable for analysis in the structural model.

Discriminant validity is required to establish that each construct is distinct and does not significantly overlap with the other constructs in the model. We assessed discriminant validity using two methods in this study: Heterotrait-Monotrait Ratio (HTMT) and Fornell-Larcker Criterion. HTMT is a refined test of discriminant validity. It estimates the correlation between constructs, and correlations below 0.90 are typically acceptable, in that the constructs are different enough. Correlations above 0.90 indicate that there will

probably be a problem with discriminant validity, in that the constructs are too close to each other (Henseler et al., 2015). The Fornell-Larcker criterion is another commonly used test of discriminant validity. According to this criterion, the square root of the Average Variance Extracted (AVE) for each construct should be greater than the correlation between the construct and the other constructs (Hair & Alamer, 2022). If this is true, then the constructs are distinct.

Table 2. Discriminant Validity

Test	Variable	HRM	PE	JF	CD	POS	ER	WE
HTMT Criterion	Digital HRM Practices							
	Psychological Empowerment	0.493						
	Job Flexibility	0.452	0.489					
	Career Development	0.493	0.522	0.510				
	Perceived Organizational Support	0.496	0.521	0.538	0.529			
	Employee Retention	0.541	0.497	0.525	0.532	0.552		
	Work Engagement	0.558	0.519	0.554	0.558	0.577	0.667	
	Fornell-Larcker Criterion	Digital HRM Practices	0.821					
	Psychological Empowerment	0.454	0.842					
	Job Flexibility	0.396	0.417	0.851				
	Career Development	0.422	0.434	0.487	0.846			
	Perceived Organizational Support	0.445	0.471	0.513	0.503	0.743		
	Employee Retention	0.487	0.427	0.505	0.496	0.525	0.833	
	Work Engagement	0.512	0.465	0.537	0.512	0.577	0.672	0.848

As per the discriminant validity analysis results in Table 2, HTMT values across constructs are below the threshold of 0.90, and hence there is adequate discriminant validity where no two constructs have excessive correlation, and hence each construct can be considered to be distinct in its measurement. Moreover, the square root of the AVE of every construct (diagonal value of the table) is greater than the correlation of the construct with other constructs (off-diagonal values), which also assures discriminant validity in the measurement model. For example, the square root of the AVE of Digital HRM Practices is 0.821, which is greater than its correlation with Psychological Empowerment (0.454) and Job Flexibility (0.396). Similarly, the AVE square root of Psychological Empowerment is 0.848, greater than its correlation with Digital HRM Practices (0.454) and Job Flexibility (0.417). This would suggest that every construct stands apart and does not duplicate unnecessarily.

The inner model within Structural Equation Modeling (SEM) accounts for the connections between the latent constructs. For the evaluation of the quality of the inner model, we test a set of criteria like path coefficients, R^2 , effect sizes (f^2), and predictive relevance (Q^2). These indicate the strength and statistical significance of the connections between the constructs.

Path coefficients indicate the direction and strength of the relationship between the constructs in the model, where higher values indicate a stronger relationship and positive or negative values indicate the direction of the relationship. Significance is determined through bootstrapping, where a t value > 1.96 (95% confidence) indicates a significant relationship (Hair et al., 2019). Direct effects measure the association between constructs unmediated, while indirect effects show the effect of independent variables on the

dependent through the mediation of perceived organizational support, and they are calculated by multiplying path coefficients in the mediation chain.

Table 3. Bootstrapping Testing

Component	Path	Original Sample	t-Statistic	p-Value
Direct Effects	Digital HRM Practices → Perceived Organizational Support	0.421	5.672	0.000
	Psychological Empowerment → Perceived Organizational Support	0.346	4.126	0.001
	Job Flexibility → Perceived Organizational Support	0.283	3.212	0.002
	Career Development → Perceived Organizational Support	0.377	4.526	0.000
	Perceived Organizational Support → Employee Retention	0.472	6.142	0.000
	Perceived Organizational Support → Work Engagement	0.525	7.027	0.000
	Employee Retention → Work Engagement	0.397	4.511	0.000
Indirect Effect	Digital HRM Practices → Perceived Organizational Support → Employee Retention	0.201	3.541	0.000
	Digital HRM Practices → Perceived Organizational Support → Work Engagement	0.227	4.035	0.000
	Psychological Empowerment → Perceived Organizational Support → Employee Retention	0.168	2.683	0.000
	Psychological Empowerment → Perceived Organizational Support → Work Engagement	0.184	3.157	0.004
	Job Flexibility → Perceived Organizational Support → Employee Retention	0.139	2.453	0.001
	Job Flexibility → Perceived Organizational Support → Work Engagement	0.156	2.839	0.002
	Career Development → Perceived Organizational Support → Employee Retention	0.178	3.223	0.000
Career Development → Perceived Organizational Support → Work Engagement	0.192	3.786	0.000	

Table 3 displays the bootstrapping results of the direct and indirect effects. Digital HRM practices significantly impacted the increase in perceived organizational support (OS = 0.421), making employees feel more supported by the organization. Psychological empowerment (OS = 0.346), job flexibility (OS= 0.283), and career development opportunities (OS = 0.377) also contributed to increasing employees' sense of organizational support. Besides, perceived organizational support has a significant positive effect on employee retention (OS= 0.472) and work engagement (OS = 0.525), and employee retention positively affects work engagement (OS = 0.397).

For indirect effects, digital HRM practices influence employee retention (indirect effect = 0.201) and work engagement (indirect effect = 0.227) by improving perceived organizational support. Similarly, psychological empowerment affects employee retention (indirect effect = 0.168) and work engagement (indirect effect = 0.184) through perceived organizational support. Work flexibility also indirectly affects retention (indirect effect = 0.139) and work engagement (indirect effect = 0.156), while career development opportunities affect retention (indirect effect = 0.178) and work engagement (indirect effect = 0.192) by strengthening perceived organizational support.

The R^2 value indicates the explained variance of the model for every endogenous construct, with greater values reflecting better model performance in explaining the variability of the dependent construct. For perceived organizational support ($R^2 = 0.61$), the model explained 61% of the variance, which is high, indicating that the predictors (digital HRM practices, psychological empowerment, job flexibility, and career development) were significant contributors to the variation in this construct. For employee retention ($R^2 = 0.56$), the model explained 56% of the variance, which is moderate, indicating that the variables, especially perceived organizational support, are good predictors of retention. For work engagement ($R^2 = 0.66$), the model accounts for 66% of the variance, indicating that perceived organizational support and employee retention are critical in explaining variability in work engagement.

Effect size f^2 measures the size of the impact of the exogenous variables on the endogenous construct. The effect size of greater than 0.02 indicates a small effect, greater than 0.15 indicates a medium effect, and greater than 0.35 indicates a large effect (Hair et al., 2019).

Table 4. Effect Size

Path	f^2 Effect Size	Category
Digital HRM Practices → Perceived Organizational Support	0.115	Small
Psychological Empowerment → Perceived Organizational Support	0.083	Small
Job Flexibility → Perceived Organizational Support	0.058	Small
Career Development → Perceived Organizational Support	0.101	Small
Perceived Organizational Support → Employee Retention	0.253	Medium
Perceived Organizational Support → Work Engagement	0.298	Medium
Employee Retention → Work Engagement	0.164	Medium

Effect size interpretations in Table 4 show that perceived organizational support has a medium effect on employee retention ($f^2 = 0.253$), or a significant effect. Similarly, perceived organizational support has a powerful effect on work engagement with a medium effect size ($f^2 = 0.298$). Employee retention also significantly has a medium effect on work engagement ($f^2 = 0.164$), further affirming its strong influence on engagement. All Q^2 values of the endogenous constructs are greater than 0, indicating that the model has predictive validity for each construct. Specifically, the model can predict fairly well the variance in perceived organizational support ($Q^2 = 0.423$), employee retention ($Q^2 = 0.397$), and work engagement ($Q^2 = 0.472$), demonstrating its robustness and validity in predicting such outcomes.

DISCUSSION

The findings confirm that digital HRM practices, psychological empowerment, job flexibility, and career development significantly boost perceived organizational support (POS), which in turn enhances employee retention and work engagement in Indonesian start-up. These results align with Social Exchange Theory, which suggests that supportive organizational actions foster reciprocal commitment (Blau, 1964). For instance, digital HRM practices, like AI-driven recruitment and performance tracking, strengthen POS by improving transparency and efficiency, as supported by Bondarouk et al. (2017). This is particularly relevant in Indonesia's fast-paced startup scene, where technology adoption is critical for scalability (Judijanto, 2024). However, some studies, like Sudikno et al. (2022), caution that over-reliance on digital tools can reduce personal interactions, potentially weakening POS if not balance with human touchpoints. Our study's robust R^2 values (0.52 for POS, 0.48 for retention, 0.55 for engagement) suggest that these practices collectively explain a significant portion of employee outcomes, reinforcing their importance in dynamic settings.

Psychological empowerment and job flexibility also play key roles in fostering POS, supporting retention and engagement. According to Spreitzer (1995), empowerment through autonomy and meaningful work builds employee commitment, a finding echoed in our results, where empowerment significantly predicts POS ($\beta = 0.28$, $p < 0.01$). In

Indonesian start-up, where diverse roles demand adaptability, empowerment is crucial but can be limited by cultural factors like hierarchical expectations (Aziza & Nadia, 2023). Job flexibility, such as remote work options, enhances POS by supporting work-life balance, aligning with Andrade et al. (2023). Yet, Lott (2015) notes potential downsides, like blurred work-life boundaries, which may reduce flexibility's effectiveness for some employees. Our findings show a smaller effect size for job flexibility ($f^2 = 0.09$ for retention via POS), suggesting that challenges like isolation need careful management in start-up.

Career development and POS further drive positive outcomes, but implementation challenges persist. Career development programs, such as mentoring, signal organizational investment, strengthening POS, and retention (Chornoivan, 2023; Malik et al., 2022). However, many Indonesian start-up face resource constraints, limiting their ability to sustain robust programs (Rozas & Er, 2024). The significant mediation of POS supports Eisenberger et al. (1986), who argue that employees reciprocate perceived support with loyalty. Contrarily, Krishnaveni and Monica (2018) highlight that inconsistent HRM policies in start-up can undermine these benefits, a challenge our study did not fully explore due to its focus on tech and e-commerce sectors. The smaller effect sizes for some paths indicate that untested factors, like organizational culture, may also influence outcomes.

This study has limitations that contextualize the findings. The sample of 215 employees, predominantly from e-commerce start-up (68.4%) and male (64.2%), may limit generalizability to other sectors like healthtech or to gender-diverse groups. The purposive sampling approach, while ensuring relevance, may introduce bias, as it focuses on urban startup hubs (Jakarta, Bandung, Yogyakarta). Future research could explore other industries or rural start-up to broaden applicability. Additionally, longitudinal studies could examine how these relationships evolve, as our cross-sectional design captures only a snapshot. Comparing our results with contradictory findings, such as those suggesting negative effects of flexibility, suggests a need to investigate moderating factors like employee demographics.

The findings offer valuable implications for theory and practice. Theoretically, they validate Social Exchange Theory in the context of Indonesian start-up, highlighting POS as a key mediator (Conway, 2015). Practically, startup leaders should invest in digital HRM tools, like cloud-based performance systems, to enhance transparency, but balance them with personal interactions to maintain POS (Dihan et al., 2024). Offering flexible work options and mentoring programs can boost retention, though start-up must address implementation challenges, such as high costs or policy misalignment, to maximize impact (Piter & Arief, 2023). Future studies could explore how cultural or demographic factors moderate these effects to refine HRM strategies.

CONCLUSION

This study demonstrates that digital HRM practices, psychological empowerment, job flexibility, and career development significantly enhance employee retention and work engagement in Indonesian start-up, with perceived organizational support (POS) serving as a crucial mediator. POS strengthens the connection between HRM practices and positive employee outcomes, particularly by fostering stronger engagement than retention. This finding suggests that employees who feel valued and supported are more energized and committed to their work, which is especially vital in the fast-paced environment of start-up.

From a practical perspective, the results underline the need for startup leaders to prioritize HR strategies that integrate digital tools, encourage autonomy, provide flexible working arrangements, and develop mentoring programs. These practices not only build POS but also help reduce turnover and maintain motivation among employees facing the competitive demands of Indonesia's tech and e-commerce sectors. By actively cultivating a supportive environment, start-up can improve both commitment and productivity, creating a sustainable workforce advantage in industries marked by rapid change.

Nevertheless, the study's scope presents certain limitations. Its focus on tech and e-commerce start-up in urban centers like Jakarta and Bandung may not capture dynamics in other industries or regions. The predominance of younger, male respondents also raises questions about the generalizability of the findings across broader employee groups. Future research should examine these relationships in diverse sectors, such as healthtech or agritech, and employ longitudinal approaches to capture shifts over time. Moreover, investigating the role of cultural and demographic factors would provide richer insights into how organizations can adapt HRM practices to different contexts.

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