

STRATEGIES FOR ENGAGEMENT EMPLOYEES: THE IMPACT OF COMPENSATION, SUPERVISOR SUPPORT, CAREER DEVELOPMENT, AND DIGITAL LITERACY

ESTRATÉGIAS PARA O ENGAJAMENTO DOS FUNCIONÁRIOS: O IMPACTO DA REMUNERAÇÃO, DO APOIO DA SUPERVISÃO, DO DESENVOLVIMENTO DE CARREIRA E DA ALFABETIZAÇÃO DIGITAL

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Gustiawan Dwi Mustofa*

*Management Department, Bina Nusantara University, Tangerang, Indonesia
gustiawan.mustofa@binus.ac.id

Farren Rangga Pradipta*

*Management Department, Bina Nusantara University, Tangerang, Indonesia
farren.pradipta@binus.ac.id

Diena Dwidienawati*

*Management Department, Bina Nusantara University, Tangerang, Indonesia
diena.t@binus.edu

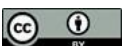
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Abstract

Employee engagement has emerged as a central issue for organizational sustainability, particularly amid digital transformation where motivation and adaptability are vital. Despite extensive research, the understanding of its antecedents remains fragmented, especially in developing contexts. This study investigates how Compensation, Career Development, Perceived Supervisor Support, and Digital Literacy influence Employee Engagement in Indonesian organizations. Using a quantitative design with SmartPLS analysis, data were collected from employees across multiple sectors. The results show that compensation, career development, and perceived supervisor support significantly enhance engagement, while digital literacy has a positive but comparatively weaker effect. Among these variables, career development exerts the strongest influence, emphasizing the importance of growth and development opportunities in sustaining engagement. The study contributes to the literature by integrating traditional motivational constructs with digital competency perspectives and highlighting the need to contextualize engagement models in emerging economies. Practically, it suggests that organizations should strengthen fair compensation, structured career development, supportive leadership, and digital readiness to build enduring engagement in technology-driven workplaces.

Resumo

O engajamento dos funcionários emergiu como uma questão central para a sustentabilidade organizacional, particularmente em meio à transformação digital, onde a motivação e a adaptabilidade são vitais. Apesar da extensa pesquisa, a compreensão de seus antecedentes permanece fragmentada, especialmente em contextos de países em desenvolvimento. Este estudo investiga como a Remuneração, o Desenvolvimento de Carreira, o Apoio Percebido da Supervisão e a Alfabetização Digital influenciam o Engajamento dos Funcionários em organizações indonésias. Utilizando uma abordagem quantitativa com análise SmartPLS, os dados foram coletados de funcionários de diversos setores. Os resultados mostram que a remuneração, o desenvolvimento de carreira e o apoio percebido da supervisão aumentam significativamente o engajamento, enquanto a alfabetização digital tem um efeito positivo, porém comparativamente mais fraco. Dentre essas variáveis, o desenvolvimento de carreira exerce a influência mais forte, enfatizando a importância das oportunidades de crescimento e desenvolvimento para a manutenção do engajamento. O estudo contribui para a literatura ao integrar construtos motivacionais tradicionais com perspectivas de competências digitais e destacar a necessidade de contextualizar os modelos de engajamento em economias emergentes. Na prática, sugere que



Keywords: Compensation. Career Development. Perceived Supervisor Support. Digital Literacy. Employee Engagement.

as organizações devem fortalecer a remuneração justa, o desenvolvimento de carreira estruturado, a liderança de apoio e a prontidão digital para construir um engajamento duradouro em ambientes de trabalho impulsionados pela tecnologia.

Palavras-chave: Remuneração. Desenvolvimento de Carreira. Percepção de Apoio da Supervisão. Alfabetização Digital. Engajamento dos Funcionários.

1 INTRODUCTION

Employee engagement has been widely recognized as an essential factor for both individual and organizational success. Boccoli, Gastaldi, and Corso (2023) state that research has shown that high levels of EE sustain individuals' job satisfaction, adaptivity and creativity, leading to higher productivity, profitability and customer satisfaction, and to lower absenteeism and turnover. Wittenberg, Eweje, Taskin, and Forsyth (2024) describe engagement, often referred to as work engagement, employee engagement, job engagement, or organizational engagement, as a positive psychological condition related to work that is reflected in employees' consistent commitment to their tasks and their organization. Andrić, Priyashantha, and De Alwis (2023) argue that employee engagement represents a sense of enthusiasm, dedication, and deep involvement in work, creating an experience that is both pleasant and meaningful. This condition motivates employees to display strong energy, passion, and mental, physical, and emotional involvement, which ultimately supports positive organizational outcomes.

Boccoli et al. (2023) state that tracking and fostering engagement is essential not only for improving the overall well-being of employees within an organization but also for supporting the achievement of broader organizational objectives. The wider body of engagement research further indicates that engagement contributes to improved organizational outcomes, including profitability and productivity (Wittenberg, Eweje, Taskin, & Forsyth, 2024). These outcomes encompass increases in individual performance, financial performance, productivity levels, sales, and customer satisfaction. In addition, employee engagement has been shown to predict higher well-being, enhanced life satisfaction, stronger retention, and lower intentions to leave the organization (Andrić et al., 2023).

Sinisterra, Peñalver, and Salanova (2024) highlight that within the uncertain conditions currently faced by organizations, TM practices serve as an effective approach to lowering employees' turnover intention, with employee engagement acting as a key mediating mechanism in this relationship. Although previous research has shown a strong association among TM, employee engagement, and turnover intention, as well as underscored the critical importance of managing these aspects for organizational success and employee wellbeing, there is still an absence of systematic reviews that examine the interplay of all three variables together (Sinisterra et al., 2024). Furthermore, such insights would be valuable given the established evidence that higher engagement contributes to positive outcomes, including increased employee commitment, enhanced wellbeing, greater productivity, and improved performance within organizations (Andrić et al., 2023).

1.1 Research gap

Although employee engagement has been widely recognized as a key driver of individual and organizational outcomes, existing studies still show several gaps in understanding its antecedents and contextual influences. Shiferaw and Birbirs (2025) emphasize that the linkage between digital technology and human resource practices was not more focused before and that previous studies were limited in methodology and geographical scope, with most being conducted in Western economies, thereby calling for more exploration in developing contexts where digital literacy remains underrepresented. Mishra et al. (2024) describe employee engagement as a multi-faceted construct affected by various factors such as career advancement opportunities, recognition, collaboration, and credibility in leadership, yet they also indicate that the relationships among compensation and career development remain inconsistent across studies and organizational settings. Similarly, Boccoli et al. (2022) highlight that employee engagement is strongly influenced by external variables such as social interaction and organizational context, and that monitoring engagement dynamically through modern digital technologies may foster engagement, but the integration of digital literacy as a human resource capability in engagement frameworks is still limited. Furthermore, Lestari et al. (2021) find that the quality of relationships between superiors and subordinates is dominated by out-group relationships due to limited trust and

contractual ties, reflecting low perceived supervisor support that may hinder employees' engagement levels.

Overall, these studies reveal that while individual factors such as compensation and career development have been examined separately, and digitalization and supervisor support have been acknowledged as relevant, there remains a lack of comprehensive models integrating Compensation, Career Development, Perceived Supervisor Support, and Digital Literacy as simultaneous determinants of Employee Engagement—particularly within digitally transforming and non-Western organizational contexts. This gap provides a strong basis for further empirical investigation to deepen the understanding of how these variables jointly enhance employee engagement in the modern workplace.

1.2 Employee engagement

Employee engagement refers to a sense of enthusiasm, dedication, and deep involvement in work that creates a pleasant and satisfying experience, encouraging employees to display energy, passion, and mental, physical, and emotional investment that supports positive organizational results (Andrić, Priyashantha, & De Alwis, 2023). It has also been portrayed as the strength and orientation of employees' cognitive, emotional, and behavioral energy directed toward their roles (Shuck et al., 2017, as cited in Kwon & Kim, 2020). Engagement, often described as work engagement, employee engagement, job engagement, or organizational engagement, is generally understood as a positive psychological condition related to work that is reflected in employees' commitment to their tasks and their organization (Boccoli, Gastaldi, & Corso, 2023).

1.3 Compensation

Compensation encompasses the full range of financial returns and tangible benefits provided to employees as part of the employment relationship, which includes direct monetary rewards such as wages, salaries, bonuses, and commissions, along with indirect benefits such as insurance coverage, paid leave, and retirement programs. Hassan (2022) shows that reward and compensation mechanisms play a significant mediating role in linking HRM practices to employee retention within the retail sector. However, Zaqiyah et al. (2023) observe that some organizations continue to face elevated turnover

rates despite offering competitive compensation, suggesting that additional determinants also contribute to employees' decisions to stay or leave. It is therefore essential to examine how compensation and benefits may support and enhance employee engagement within PFBSs. Various factors contribute to reduced engagement levels, with inadequate compensation and benefits identified as one of the primary causes (Nikisi, 2024).

1.4 Career development

Career development refers to structured, deliberate, and systematically planned initiatives aimed at aligning individual career aspirations with organizational talent needs, which include providing avenues for employees to expand their knowledge, build new competencies, and progress within the organization through training opportunities, mentoring, job rotations, and clearly defined advancement routes (Awaluddin & Fadli, 2024). Several empirical studies have suggested a one-way causal link, indicating that when organizations offer developmental opportunities to their employees, it ultimately enhances their level of engagement (Kwon & Jeong, 2024). Employees tend to respond with stronger engagement when they are given opportunities to advance their professional capabilities, such as through salary increases and promotional prospects (Zhu & Song, 2023). These findings collectively demonstrate that career development exerts a significant and positive influence on employee engagement.

1.5 Perceived supervisor support

Supervisor support, often referred to as perceived supervisor support (PSS), reflects employees' perceptions of the extent to which their direct supervisors appreciate their contributions, show concern for their wellbeing, and provide assistance when necessary. This support includes instrumental forms, such as offering resources, removing barriers, and facilitating work processes, as well as emotional forms, such as demonstrating care, listening, and providing encouragement (Lestari et al., 2021). Findings from Lee, S. E., and Shin, G. (2023) indicate that both organizational and supervisory support exert a direct influence on employee engagement across various work arrangements. This suggests that perceived supervisor support remains essential for

sustaining employee engagement, particularly during periods of disruption such as the COVID-19 pandemic.

1.6 Digital literacy

Digital literacy is understood as the capacity to utilize information and communication technologies to locate, assess, generate, and convey information, involving both cognitive and technical abilities that exceed basic computer use and include critical evaluation of digital content, problem solving through digital tools, and adaptability to emerging technologies (Nikou et al., 2022; Kadhim, 2024). The integration of digital technologies across various business functions has transformed work processes and reshaped how organizations oversee their workforce (Shiferaw & Birbirs, 2024). Existing research indicates that strengthening workers' digital competencies enhances employment opportunities by increasing human capital and facilitating access to information, which often leads to improvements in income, working hours, and job autonomy. These outcomes contribute to greater employee retention, with digital literacy serving as an essential element in business operations because the effective use of digital technologies substantially enhances workplace performance (Pilav-Velić et al., 2021; World Bank, 2023). Furthermore, examining the application of digital technologies in human resource activities, particularly the use of electronic human resource practices and their influence on employee productivity, becomes more accessible when viewed through the lens of social exchange theory (Shiferaw & Birbirs, 2024).

2 METHODOLOGY

This study employs a quantitative method with a cross-sectional survey design to examine the factors that influence employee engagement. The dataset consists of 207 respondents representing Generation X (15.5 percent), the Millennial Generation (30.4 percent), and Generation Z (54.1 percent), distributed across multiple provinces in Indonesia. Data collection took place in September 2024 through an online questionnaire comprising 24 structured items that were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). All measurement instruments were

adapted from previously validated studies to maintain their validity and reliability (Suhartini et al., 2022).

The data were analyzed using the Partial Least Squares Structural Equation Modeling (PLS SEM) technique with SmartPLS 4.0. This analytical approach was selected because it is capable of accommodating complex research models, allows flexibility with varying sample sizes, and emphasizes predictive accuracy and the explanation of variance (Hair et al., 2021; Becker et al., 2023). The analysis process was conducted in two stages: measurement model evaluation (validity and reliability) and structural model evaluation (path coefficients, R^2 values, and significance testing) using a bootstrapping procedure with 5000 resamples to test statistical significance (Sarstedt et al., 2024).

3 RESULTS AND DISCUSSION

3.1 Respondent characteristics

Based on data collection results from 207 respondents, a diverse demographic profile was obtained consisting of 54.6% male respondents with dominant age above 24 years (55.6%). Generation Z dominated the sample (54.1%), followed by Generation Y (30.4%) and Generation X (15.5%), with the majority having undergraduate education (59.4%) and 1-3 years of work experience (34.8%). The geographical distribution covered various provinces with the largest concentration in Bengkulu (36.2%), Bali (29.5%), and Gorontalo (10.1%), representing workforce conditions across Indonesian regions. Most respondents had income in the range of 5-10 million rupiah (44.9%), were unmarried (55.6%), and had dependents (55.6%), reflecting the diversity of the Indonesian workforce and enhancing the generalizability of research findings.

3.2 Measurement model evaluation (Outer Model)

The Validity Test figure presents the results of the validity assessment used to ensure that each indicator within the research model accurately and consistently measures its intended construct. This visualization allows for the examination of both convergent

and discriminant validity, thereby providing an empirical foundation for evaluating the adequacy of the measurement instruments prior to conducting further structural analysis.

Figure 1
Validity Test

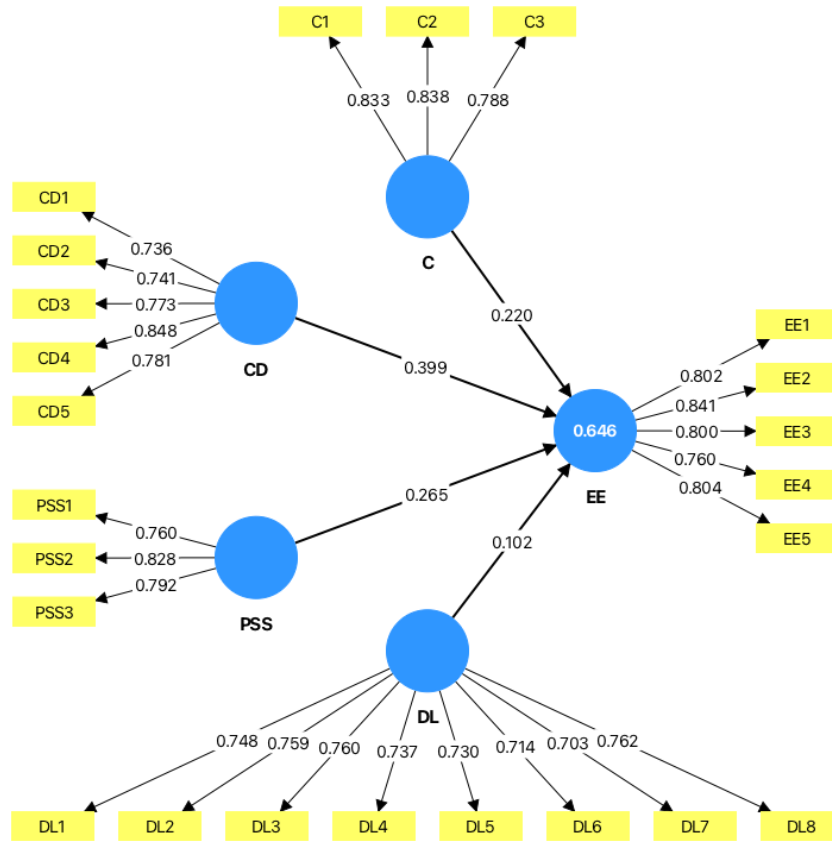


Table 1
Reliability Test

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
C	0.756	0.755	0.860	0.672
CD	0.835	0.844	0.883	0.603
EE	0.861	0.863	0.900	0.643
DL	0.882	0.887	0.906	0.547
PSS	0.707	0.706	0.837	0.631

According to Hair et al. (2022), evaluating the outer model involves four primary assessments, namely indicator reliability, internal consistency reliability, convergent validity, and discriminant validity.

Indicator reliability was assessed by analyzing the outer loading values for each indicator relative to its associated latent construct. The SmartPLS results show that all

indicators achieved loading values above 0.70. Convergent validity was examined through the Average Variance Extracted (AVE), where each construct is expected to have an AVE exceeding 0.50 to indicate that it explains at least half of the variance in its indicators. Based on the findings, every construct recorded an AVE value greater than 0.50, confirming that the criteria for convergent validity were met (Hair et al., 2022). Further reliability testing used Cronbach's Alpha, rho_A, and Composite Reliability (CR). All constructs demonstrated Cronbach's Alpha and rho_A values above 0.70, along with CR values between 0.70 and 0.95, which signifies that the measurement model possesses strong internal consistency and reliability. Discriminant validity was assessed using the Fornell Larcker Criterion and the Heterotrait Monotrait Ratio (HTMT). The square roots of AVE for each construct were higher than their correlations with other constructs, and all HTMT values were below 0.90. These outcomes confirm that each construct is conceptually distinct and measures a unique dimension, thereby supporting the discriminant validity of the model.

In detail, C ($\alpha = 0.756$; $\rho_c = 0.860$; AVE = 0.672), CD ($\alpha = 0.835$; $\rho_c = 0.883$; AVE = 0.603), EE ($\alpha = 0.861$; $\rho_c = 0.900$; AVE = 0.643), DL ($\alpha = 0.882$; $\rho_c = 0.906$; AVE = 0.547), and PSS ($\alpha = 0.707$; $\rho_c = 0.837$; AVE = 0.631) all exceed the minimum threshold values, indicating that the constructs are both reliable and valid. Therefore, no construct was eliminated in the final model, as all meet the reliability and validity standards recommended by Hair et al. (2021).

3.3 Structural model evaluation (Inner Model)

The Path Coefficients, Mean, STDEV, and T-Values table presents the structural model evaluation results, detailing the strength and significance of the relationships among the constructs in this study. By reporting the path coefficients, mean values, standard deviations, and t-values, the table provides an initial overview of the consistency of the estimates and the variables that exert influence on Employee Engagement.

Table 2*Path coefficients (Mean, STDEV, T-Values)*

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
C -> EE	0.220	0.214	0.106	2.081	0.037
CD -> EE	0.399	0.400	0.086	4.656	0.000
DL -> EE	0.102	0.105	0.059	1.737	0.082
PSS -> EE	0.265	0.270	0.081	3.290	0.001

Table 3*R-Square*

	R-square	R-square adjusted
EE	0.646	0.645

The structural model evaluation aims to examine the relationships between latent constructs and assess the predictive accuracy of the model. Based on the SmartPLS output, the adjusted R^2 value for Employee Engagement (EE) is 0.645, indicating that Compensation (C), Career Development (CD), Digital Literacy (DL), and Perceived Supervisor Support (PSS) together explain 64.5% of the variance in EE. According to Hair et al. 202, an R^2 value above 0.50 demonstrates substantial explanatory power, meaning that the model has strong predictive accuracy for Employee Engagement.

Bootstrapping with 5,000 subsamples reveals that three variables significantly influence EE at the 0.05 level. Career Development ($\beta = 0.399$, $T = 4.656$, $p = 0.000$), Compensation ($\beta = 0.220$, $T = 2.081$, $p = 0.037$), and Perceived Supervisor Support ($\beta = 0.265$, $T = 3.290$, $p = 0.001$) have significant positive effects, while Digital Literacy ($\beta = 0.102$, $T = 1.737$, $p = 0.082$) is not significant. These results indicate that three of the four hypotheses are supported because they meet the significance criteria of $t > 1.96$ and $p < 0.05$. To further assess the strength of these relationships, the f-square (f^2) values were examined to determine the effect size of each exogenous variable on Employee Engagement. According to Hair et al. 2022, an f^2 value of 0.02 represents a small effect, 0.15 a medium effect, and 0.35 a large effect. The analysis shows that Career Development has the largest effect on Employee Engagement ($f^2 = 0.221$), indicating a medium effect size. Compensation ($f^2 = 0.064$) and Perceived Supervisor Support ($f^2 = 0.093$) both show small effect sizes, while Digital Literacy ($f^2 = 0.011$) has no meaningful

effect. These results confirm that Career Development provides the strongest contribution to Employee Engagement, followed by Perceived Supervisor Support and Compensation.

Career Development emerges as the strongest predictor of Employee Engagement, consistent with findings from the Work Institute 2024 and O.C. Tanner 2024, which emphasize that career growth opportunities significantly enhance employee motivation and retention. Career development fosters purpose, future orientation, and a sense of security, reflecting organizational support for long-term employee advancement, as also supported by PwC 2024. Compensation also demonstrates a significant influence, reinforcing its role as a key engagement driver. This finding aligns with Gallup 2024, which reports that fair and competitive pay contributes to 30% of preventable disengagement among employees. Perceived Supervisor Support also shows a major role in enhancing Employee Engagement, aligning with Workday 2023, which highlights that supportive leadership can increase engagement likelihood by up to 300%. Meanwhile, Digital Literacy shows a positive but not statistically significant effect on Employee Engagement. Although it contributes positively, its influence is not strong enough to be statistically confirmed in this model.

This finding is consistent with prior studies that also reported digital capability variables may not directly influence work-related outcomes. Putra et al. 2023 stated that “digital literacy and transformational leadership have no effect on employee performance” in *Enrichment: Journal of Management*, and Muafi et al. 2023 found that “digital skills do not have significant positive effect on the performance of MSME entrepreneurs” in the *International Journal of Sustainable Development and Planning*. These results reinforce the interpretation that the impact of Digital Literacy may be context-dependent or mediated by other organizational factors, particularly in settings where technology adoption is uneven or employees require stronger digital adaptation support.

Overall, the high adjusted R^2 value of 0.645 and the f-square results demonstrate that the combination of Compensation, Career Development, Digital Literacy, and Perceived Supervisor Support provides a strong and comprehensive explanation of Employee Engagement. This result confirms that Employee Engagement in this study is primarily driven by Career Development, followed by Perceived Supervisor Support and Compensation, while Digital Literacy plays a minor, indirect, and non-significant role in shaping engagement.

4 CONCLUSION

This study confirms that employee engagement is influenced by both intrinsic and extrinsic factors, consistent with Herzberg's Two-Factor Motivation Theory (Wedadjati & Helmi, 2022). The findings reveal that Compensation, Career Development, and Perceived Supervisor Support have significant positive effects on Employee Engagement, while Digital Literacy also contributes to employees' adaptability and enthusiasm within digitally transforming organizations. These results highlight that fair compensation, supportive leadership, and opportunities for professional growth are essential to maintaining employees' psychological commitment and emotional connection to their work.

Employee engagement emerges when organizations provide not only material rewards but also opportunities that fulfill higher motivational needs such as recognition, autonomy, and personal development. The integration of digital literacy further strengthens engagement by enabling employees to perform effectively and stay connected in modern, technology-driven environments. This research extends Herzberg's motivational framework to the digital era and demonstrates that a balance between extrinsic and intrinsic motivators can sustainably enhance engagement and organizational performance.

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Authors' Contribution

All authors contributed equally to the development of this article.

Data availability

All datasets relevant to this study's findings are fully available within the article.

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