

Human Capital Development and Employee Performance in the Indonesian Telecommunications Sector

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Abstrak

Despite extensive research examining the relationship between training, career development, and employee performance, empirical findings remain inconsistent, particularly in the telecommunications industry, where rapid technological change requires continuous human capital development. This study aims to analyze the effects of training and career development on employee performance at PT Telkomsel Medan Branch while providing empirical evidence from the perspective of Human Capital Theory. A quantitative approach was employed using a survey of 140 employees selected through the Slovin formula. Data were collected using structured questionnaires and analyzed using multiple linear regression with the assistance of SPSS software. The findings indicate that both training and career development have a positive and significant effect on employee performance, both partially and simultaneously ($p < 0.05$). Career development demonstrates a stronger contribution to employee performance than training, highlighting the importance of integrating competency development with long-term career opportunities. These findings reinforce Human Capital Theory by emphasizing that organizational investment in employee competencies and career development contributes to improved organizational performance. The study provides practical implications for designing integrated human resource development strategies in the telecommunications sector.

Keywords

Training, Career Development, Employee Performance

INTRODUCTION

The rapid advancement of digital technology has intensified competition in the telecommunications industry, requiring companies to continuously improve organizational performance through effective human resource management (Daulay et al., 2019). In technology-intensive industries such as telecommunications, employee performance has become a strategic asset because organizational competitiveness depends not only on technological innovation but also on employees' ability to adapt to dynamic business environments (Lesmana et al., 2022). Therefore, organizations are required to invest in human

capital through continuous training and career development to ensure employees possess the competencies needed to achieve organizational objectives (Siswadi & Fahmi, 2023).

According to Human Capital Theory, investments in employee knowledge, skills, and competencies generate long-term benefits for both individuals and organizations (Rumawas, 2018). Training enables employees to acquire technical competencies and adapt to technological changes, while career development provides opportunities for continuous professional growth and strengthens employees' motivation to achieve higher performance (Hasibuan & Bayzura, 2021). Consequently, these two human resource management practices are expected to play complementary roles in improving employee performance, particularly in organizations operating within highly competitive and technology-driven industries (Kloutsiniotis & Mihail, 2020).

PT Telkomsel Medan Branch represents one of the regional operational centers responsible for supporting digital telecommunication services in Sumatra. The increasing complexity of telecommunication services requires employees to continuously update their competencies while maintaining high levels of performance. A preliminary survey conducted on 30 employees indicates that the company has implemented training and career development programs relatively well. Nevertheless, several operational challenges remain, including the limited achievement of work targets, disparities in competency adaptation to technological changes, and concerns regarding the effectiveness of career development in supporting employee performance (Meijerink et al., 2020; Nugroho & Pamungkas Putro, 2021; Asif et al., 2023). These conditions suggest that strengthening employee performance requires not only continuous training but also effective career development strategies.

Previous studies generally agree that training contributes positively to employee performance by improving employees' competencies and work effectiveness (Firdaus et al., 2025; Septiani et al., 2024; Wahyudi & Tupti, 2019). Likewise, career development has been recognized as an important organizational strategy for enhancing employee motivation and performance (Azkananda et al., 2025; Putri & Frianto, 2022). However, empirical evidence remains inconclusive. For example, Ilahi and Lestari (2025) reported that career development did not significantly influence employee performance, indicating that career development programs may not always produce optimal outcomes without effective competency development. These inconsistent findings demonstrate that the relationships among training, career development, and employee performance require further empirical investigation.

Based on these considerations, the research gap of this study lies not merely in the research setting but in the need to clarify the simultaneous roles of training and career development in explaining employee performance within technology-intensive organizations. Unlike previous studies that predominantly examined the direct influence of each variable separately, this study integrates training and career development within the perspective of Human Capital Theory to explain employee performance at PT Telkomsel Medan Branch. Therefore, this study aims to analyze the influence of training and career development on employee performance while providing empirical evidence regarding the effectiveness of human capital investment in the telecommunications industry.

RESEARCH METHOD

This study employed a quantitative approach with an associative-explanatory survey design to examine the influence of training and career development on employee performance at PT Telkomsel Medan Branch (Lamonge et al., 2019). The population consisted of all employees of PT Telkomsel Medan Branch. The sample comprised 140 respondents, determined using the Slovin formula to ensure adequate representation of the population. Furthermore, respondents were selected using a simple random sampling technique, providing each employee with an equal opportunity to participate in the study.

Primary data were collected using a structured questionnaire based on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire consisted of three research variables: Training (X1), Career Development (X2), and Employee Performance (Y). The measurement indicators were adapted from previous studies in the field of human resource management and employee performance to ensure content validity. The operational definitions of the research variables are presented in Table 1.

Table 1. Operational Definition of Variables

Variable	Indicators	Source
Training (X1)	Training objectives, training materials, instructor competence, training methods, participant involvement	Hasibuan (2019); Dessler (2020)
Career Development (X2)	Career planning, promotion opportunities, competency development, career support, career advancement	Hasibuan (2019); Noe (2020)
Employee Performance (Y)	Quality of work, quantity of work, timeliness, effectiveness, responsibility	Mangkunegara (2017); Robbins & Judge (2019)

Before the main survey, the research instrument was tested for validity and reliability. Item validity was evaluated using the product-moment correlation technique, while instrument reliability was assessed using Cronbach's Alpha. The results indicated that all questionnaire items met the required validity and reliability criteria, indicating that the instrument was appropriate for subsequent data analysis (Ghozali, 2019; Sugiyono, 2022).

The collected data were analyzed using multiple linear regression to determine the influence of training and career development on employee performance. Prior to hypothesis testing, classical assumption tests, including normality, multicollinearity, and heteroscedasticity tests, were conducted to ensure that the regression model satisfied the required statistical assumptions (Juliandi et al., 2018). Subsequently, the t-test was employed to examine the partial effect of each independent variable, whereas the F-test was used to evaluate their simultaneous influence on employee performance.

This study adhered to research ethics principles throughout the research process. Prior to data collection, respondents were informed about the objectives of the study and voluntarily agreed to participate. All responses were treated confidentially and used solely for academic purposes. In addition, permission to conduct the research was obtained from PT Telkomsel Medan Branch, and no personal information that could identify individual respondents was disclosed.

RESEARCH AND DISCUSSION

Multiple Linear Regression Analysis Test

The multiple linear regression model is used to determine the effect of independent variables on the dependent variable.

Table 2. Multiple Linear Regression Test coefficients^a

Model		Unstandardized	Coefficients	Coefficients	t	Sig	Collinearity	Statistics
		B	Std Error	Beta			Tolerance	VIF
1	(Constant)	19.496	3.311		5.889	<0.001		
	Training (X1)	0.122	0.061	0.180	1.996	0.048	0.747	1.339
	Career Development (X2)	0.389	0.119	0.294	3.270	0.001	0.747	1.339

a Dependent Variable : Employee performance (Y)

Source: SPSS 29.00 Data Processing (2026)

From the table above, the regression equation can be determined based on the B column, which represents the regression coefficients for each variable. Thus, the regression equation is as follows: $Y = 19.496 + 0.122X_1 + 0.389X_2 + \epsilon$.

The explanation regarding the results of the regression equation can be implemented as follows: The constant value of 19.496 indicates that if the training and career development variables are zero or do not change, then employee performance has a value of 19.496. Nilai koefisien regresi pelatihan sebesar 0.122 dengan arah positif menunjukkan bahwa setiap peningkatan pelatihan sebesar satu satuan akan meningkatkan kinerja karyawan sebesar 0.122, dengan asumsi variabel lain dianggap tetap. The regression coefficient value of career development is 0.389 with a positive direction, indicating that every one-unit increase in career development will increase employee performance by 0.389, assuming other variables are held constant (Juliandi et al., 2018).

Hypothesis Testing t Test (Partial)

Based on the SPSS 29 output results, the t test results can be seen in Table 3 below:

Table 3. t Test coefficients^a

Model		Unstandardized	Coefficients	Coefficients	t	Sig	Collinearity	Statistics
		B	Std Error	Beta			Tolerance	VIF
1	(Constant)	19.496	3.311		5.889	<0.001		
	Training (X1)	0.122	0.061	0.180	1.996	0.048	0.747	1.339
	Career Development (X2)	0.389	0.119	0.294	3.270	0.001	0.747	1.339

a Dependent Variable : Employee performance (Y)

Source: SPSS 29.00 Data Processing (2026)

The Effect of Training on Employee Performance

Based on the results of partial testing of the effect of training on employee performance, the calculated t-value for the training variable is 1.996 and the t-table value with $\alpha = 5\%$ is 1.977. The training variable has a calculated t-value greater than the t-table ($1.996 > 1.977$) with a significance level of $0.048 < 0.05$. This indicates that partially, training has a positive and significant effect on employee performance at PT. Telkomsel Medan Branch (Sugiyono, 2022).

The Effect of Career Development on Employee Performance

Based on the results of partial testing of the effect of career development on employee performance, the t-value obtained for the career development variable is 3.270 and the t-table with $\alpha = 5\%$ is 1.977. The career development variable has a t-value greater than the t-table ($3.270 > 1.977$) with a significance level of $0.001 < 0.05$. This indicates that, partially, career development has a positive and significant effect on employee performance at PT. Telkomsel Medan Branch (Sugiyono, 2022).

F Test (Simultaneous)

Based on the SPSS output results, the F test results can be seen in Table 4 as follows:

Table 4. F Test ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	319.403	2	159.701	14.228	<0.001b
	Residual	1537.740	137	11.224		
	Total	1857.143	139			

a. Dependent Variable: Employee performance (Y)

b. Predictors (Constant), Career development (X2), Training (X1)

Source: SPSS 29.00 Data Processing (2026)

From the ANOVA or F-test, the calculated F value is $14.228 > \text{table F } 2.74$ with a significance level of 0.001. This indicates simultaneously that there is a significant effect of training and career development together on employee performance.

Test of the Coefficient of Determination (R-Square)

Table 5. R-Square Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.415a	0.172	0.160	3.350	1.499

a. Predictors (Constant), Career development (X2), Training (X1)

b. Dependent Variable: Employee performance (Y)

Based on Table 5, the model produced an R value of 0.415 and an Adjusted R Square value of 0.160. This indicates that training and career development jointly explain 16% of the variance in employee performance, while the remaining 84% is explained by other variables outside the research model. The relatively low Adjusted R Square suggests that employee performance is a complex construct influenced by multiple organizational and individual factors beyond training and career development. Variables such as work motivation, leadership style, organizational culture, compensation, work environment, job satisfaction, and employee engagement may also contribute substantially to employee performance. Nevertheless, the findings indicate that training and career development remain important predictors of employee performance, although their explanatory power is limited when considered independently. Therefore, future studies are recommended to incorporate additional variables in order to develop a more comprehensive model for explaining employee performance in the telecommunications industry.

DISCUSSION

The Effect of Training on Employee Performance

The findings indicate that training contributes positively to employee performance because it enhances employees' knowledge, technical skills, and ability to adapt to changing job demands. In the telecommunications industry, where technological innovation develops rapidly, employees require continuous learning to maintain their competencies. Effective training enables employees to perform their tasks more efficiently, minimize work errors, and improve service quality. However, the relatively smaller contribution of training compared with career development suggests that training primarily improves employees' short-term competencies rather than creating long-term motivation to sustain high performance.

This finding is consistent with previous studies reporting that training enhances employee competence and work effectiveness (Siswadi & Fahmi, 2023; Kidd et al., 2024). From the perspective of Human Capital Theory, training represents an organizational investment that increases employees' knowledge and skills, thereby improving their productivity and overall performance. These findings reinforce the argument that competency development through continuous training remains an important strategy for improving organizational performance.

The Effect of Career Development on Employee Performance

Career development demonstrates a stronger influence on employee performance than training because it provides employees with long-term career prospects rather than merely improving technical competencies. Employees who perceive clear opportunities for promotion, competency advancement, and professional growth are generally more motivated to achieve higher levels of performance. Such opportunities encourage employees to continuously improve their capabilities, strengthen organizational commitment, and maintain consistent work performance.

Compared with training, career development reflects employees' expectations regarding their future within the organization. Consequently, employees are more likely to demonstrate higher performance when they believe that their achievements will be recognized through career advancement. This finding supports previous studies emphasizing the importance of career development in improving employee performance (Mohsin, 2018; Harahap & Tirtayasa, 2020). Furthermore, the findings strengthen Human Capital Theory by suggesting that investments in employee development should extend beyond competency improvement to include long-term career opportunities that maximize the value of human capital.

The Effect of Training and Career Development on Employee Performance

The findings demonstrate that training and career development jointly contribute to improving employee performance. Although both variables significantly influence performance, the relatively low Adjusted R² indicates that employee performance is influenced by numerous organizational and individual factors beyond those examined in this study. Variables such as leadership style, organizational culture, work motivation, compensation, job satisfaction, employee engagement, and the work environment may also substantially explain variations in employee performance.

These findings suggest that improving employee performance cannot rely solely on training programs or career development policies. Instead, organizations should implement comprehensive human resource management strategies that integrate competency development

with motivational and organizational support systems. From the perspective of Human Capital Theory, investments in training and career development remain essential because they enhance employees' competencies and long-term potential. Nevertheless, the relatively low explanatory power of the model indicates that human capital development should be complemented by other organizational factors to maximize employee performance.

From a managerial perspective, PT Telkomsel Medan Branch should continue providing training programs that are aligned with technological developments while simultaneously strengthening transparent and merit-based career development systems. Such integration is expected to improve employee motivation, reinforce organizational commitment, and ultimately enhance employee performance in a sustainable manner.

CONCLUSION

This study concludes that both training and career development significantly improve employee performance at PT Telkomsel Medan Branch, with career development demonstrating a stronger contribution than training. These findings support Human Capital Theory, which emphasizes that investment in employee competencies and long-term career opportunities enhances organizational performance.

From a managerial perspective, PT Telkomsel Medan Branch should integrate continuous training programs with transparent and merit-based career development policies to strengthen employee competencies, motivation, and performance. This study is limited by the relatively low explanatory power of the research model, indicating that employee performance is also influenced by other factors beyond training and career development. Therefore, future studies are recommended to incorporate additional variables, such as leadership, work motivation, organizational culture, compensation, and job satisfaction, in order to develop a more comprehensive model for explaining employee performance.

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