ICOERESS
INTERNATIONAL CONFERENCE ON EDUCATION, RELIGION AND SOCIAL STUDIES
BY PASCASARJANA UIN SULTHAN THAHA SAIFUDDIN JAMBI

THE EFFECT OF DIGITAL LEADERSHIP AND ONLINE TRAINING ON EMPLOYEE PERFORMANCE IN REMOTE WORK AREAS

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2nd ICOERESS (25-09-2025)

Submission: (01-09-2025)
Published: (28-06-2026)

ABSTRACT

The digitalization era has fundamentally transformed organizational work practices, particularly through the increasing adoption of remote work and digital technologies. These changes require organizations to strengthen digital leadership and provide continuous online training to ensure optimal employee performance. This study aims to examine the influence of digital leadership and online training on employee performance in remote work areas. This research employed a quantitative approach using primary data collected through a structured questionnaire. The questionnaire was distributed via Google Forms to respondents who met the predetermined research criteria, and the data collection process was conducted under the supervision of the researcher to ensure the accuracy and completeness of the responses. The data were analyzed using multiple linear regression analysis. The findings indicate that digital leadership and online training have positive and significant effects on employee performance, both partially and simultaneously. The coefficient of determination (R^2) is 0.554, indicating that digital leadership and online training jointly explain 55.4% of the variation in employee performance, while the remaining 44.6% is explained by other variables not included in this study. These findings highlight the importance of strengthening digital leadership capabilities and implementing continuous online training programs to enhance employee performance in remote work environments.

Keywords: Digital leadership, online training, employee performance, remote work, digital transformation.

BACKGROUND

The rapid advancement of digital technologies has fundamentally transformed the way organizations operate, particularly through the widespread adoption of remote work and digital collaboration systems. Organizations are increasingly required to become more adaptive, innovative, and technology-oriented to maintain their competitiveness and improve organizational effectiveness. Consequently, employee performance has become one of the most critical determinants of organizational success, as employees are expected to perform efficiently while adapting to continuously evolving digital technologies and virtual working environments.

One of the most important organizational factors influencing employee performance in the digital era is digital leadership. Digital leadership refers to a leader's ability to guide organizational transformation through the strategic utilization of digital technologies while encouraging employees to embrace innovation and organizational change. According to Siagian (2019), digital leadership involves the capability of leaders to direct organizations toward digital transformation by integrating technology into organizational processes and decision-making. Similarly, Cahyarini (2021) argues that organizations require leaders with a digital mindset who are capable of recognizing technological opportunities, responding effectively to digital challenges, and motivating employees to adapt to changing work environments. Effective digital leadership is therefore essential for ensuring that employees remain productive, collaborative, and committed despite working in digitally mediated environments.

In addition to leadership, continuous employee competency development through online training has become increasingly important. As organizations continue to digitalize their operations, employees

must continuously update their knowledge and skills to remain effective in performing their responsibilities. According to Asari et al. (2023), training is an educational process designed to develop employees' competencies required for both current job responsibilities and future organizational needs. Likewise, Fauzan et al. (2023) define training as a systematic learning process aimed at improving employees' knowledge, technical skills, and work abilities through various instructional methods. Within remote work environments, online training offers organizations an efficient approach to enhancing employee competencies while providing flexible learning opportunities regardless of geographical limitations.

Employee performance itself represents the extent to which employees successfully accomplish organizational objectives through the effective completion of assigned duties. Budiyanto and Mochklas (2020) define employee performance as the level of success achieved in implementing organizational activities and programs in accordance with organizational objectives, legal requirements, and ethical standards. Similarly, Amalia (2017) explains that employee performance reflects both employees' work outcomes and work behaviors demonstrated while carrying out their assigned responsibilities. Therefore, maintaining high employee performance remains one of the primary objectives of human resource management in every organization.

The importance of strengthening digital leadership and online training can be observed in the performance condition of employees at BPJS Ketenagakerjaan Regional Office Sumbagut. Based on the organization's employee performance evaluation for the 2023–2024 period, the average employee performance score declined from 82.4% in 2023 to 78.4% in 2024. The most noticeable decreases occurred in the dimensions of integrity, which dropped from 80% to 73%, service orientation, which decreased from 84% to 78%, cooperation, which fell from 85% to 80%, and discipline, which declined from 83% to 79%. Although the commitment dimension showed a slight improvement from 80% to 82%, the overall reduction in performance indicates that employees continue to face challenges in maintaining optimal performance under increasingly digital working conditions.

These performance trends suggest that employees may not yet be receiving sufficient organizational support to successfully adapt to digital transformation. One possible explanation is that digital leadership has not been fully optimized to facilitate effective communication, technological adaptation, decision-making, and employee engagement in remote work settings. Leaders who lack digital competencies may experience difficulties in providing clear direction, motivating employees virtually, and creating an organizational culture that supports continuous innovation. Consequently, employees may become less engaged, less motivated, and less capable of maintaining high levels of performance.

Another factor that may contribute to declining employee performance is the limited implementation of continuous and relevant online training programs. Rapid technological developments require employees to continuously improve their digital competencies in order to perform their duties efficiently. However, when training programs are insufficient or fail to address employees' actual competency needs, employees may struggle to utilize digital technologies effectively, resulting in lower productivity, reduced confidence, and declining work performance. Continuous online training is therefore essential for ensuring that employees possess the competencies required to adapt successfully to evolving digital work environments.

Furthermore, inadequate digital leadership and insufficient competency development initiatives may indirectly reduce employees' job satisfaction because employees may perceive a lack of organizational support in responding to increasingly complex work demands. Employees who receive effective leadership guidance together with continuous learning opportunities are generally more motivated, confident, and committed to achieving organizational objectives. Therefore, strengthening both digital leadership and online training is expected not only to improve employee competencies but also to enhance overall organizational performance.

Although previous studies have demonstrated that leadership and training significantly influence employee performance, relatively few studies have specifically examined the combined effects of digital leadership and online training on employee performance within remote work environments in Indonesian public organizations. This research therefore seeks to fill this gap by investigating these

relationships at BPJS Ketenagakerjaan Regional Office Sumbagut, an institution currently undergoing digital transformation in its operational processes. The findings are expected to provide both theoretical contributions to the literature on digital human resource management and practical recommendations for strengthening leadership practices, improving employee competencies, and enhancing organizational performance in the era of digital transformation.

Based on the organizational phenomena and theoretical considerations presented above, this study aims to examine the influence of digital leadership and online training on employee performance in remote work environments. Specifically, the research addresses the following questions: (1) Does digital leadership significantly influence employee performance in remote work areas? (2) Does online training significantly influence employee performance in remote work areas? and (3) Do digital leadership and online training simultaneously influence employee performance in remote work areas?

RESEARCH METHOD

This study employed a causal (verificative) quantitative research design to examine the causal relationships between digital leadership, online training, and employee performance in remote work environments. According to Sekaran and Bougie (2013), causal research aims to investigate cause-and-effect relationships among variables and determine the extent to which changes in independent variables influence the dependent variable. A quantitative approach was adopted because it enables the researcher to objectively measure the relationships among variables using statistical analysis.

The study utilized primary data, which were collected directly from respondents through a structured survey. Sekaran and Bougie (2013) define primary data as information obtained firsthand from original sources for the specific purpose of addressing the research objectives. In this study, primary data were collected to examine employees' perceptions of digital leadership, online training, and employee performance.

Population and Sample

The population of this study consisted of employees of BPJS Ketenagakerjaan Regional Office Sumbagut who work in remote work areas. The sample was selected using a non-probability sampling technique, specifically purposive sampling. Purposive sampling is a sampling method in which respondents are selected based on specific criteria relevant to the objectives of the study (Sekaran & Bougie, 2016). Employees who met the predetermined inclusion criteria were invited to participate in the survey. Based on these criteria, a total of 193 respondents were included as the research sample.

Data Collection

Data were collected using a structured questionnaire, which was considered an effective and efficient instrument for gathering information in a digital working environment. The questionnaire was distributed electronically through Google Forms to respondents who met the sampling criteria. To ensure the accuracy and completeness of the responses, the data collection process was conducted under the supervision of the researcher. The questionnaire consisted of statements measuring digital leadership, online training, and employee performance using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

RESEARCH FINDINGS

Following the validity and reliability tests, the questionnaire items were confirmed to be both valid and reliable, indicating that the collected data were suitable for further statistical analysis. Subsequently, classical assumption tests were conducted to ensure that the regression model satisfied the necessary assumptions. These tests included the normality test and the multicollinearity test.

Normality Test

The normality test was conducted to determine whether the residuals of the regression model were normally distributed. A good regression model requires residuals that follow a normal distribution. In this study, the normality of the residuals was examined using the One-Sample Kolmogorov–Smirnov test. If the significance value (Asymp. Sig.) is greater than 0.05, the residuals are considered normally distributed; conversely, if the significance value is less than 0.05, the residuals are not normally distributed. The results of the normality test are presented in Table 1.

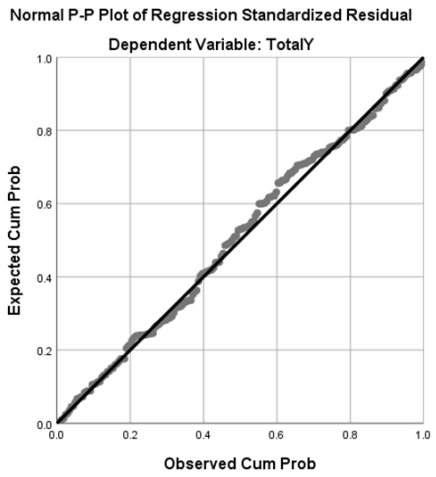
Table 1. One-Sample Kolmogorov-Smirnov Test

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		193
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	4.61122369
Most Extreme Differences	Absolute	.056
	Positive	.033
	Negative	-.056
Test Statistic		.056
Asymp. Sig. (2-tailed)		.200

a. Test distribution is Normal.
b. Calculated from data.

Source: Data processed, SPSS (2025)



Picture 1. Regresion Curve

Multicollinearity Test

Based on the results of the normality test, the significance value (Asymp. Sig.) is **0.200**, which is greater than the threshold of **0.05**. This indicates that the residuals are normally distributed. Furthermore, as illustrated in **Figure 1**, the data points on the **Normal P–P Plot of Regression Standardized Residual** closely follow the diagonal line without showing substantial deviations. Therefore, based on both the Kolmogorov–Smirnov test and the probability plot, it can be concluded that the residuals satisfy the assumption of normality.

Multicollinearity Test

The multicollinearity test was conducted to determine whether a high correlation existed among the independent variables in the regression model. A regression model is considered free from multicollinearity when the **Tolerance** value is greater than **0.10** and the **Variance Inflation Factor (VIF)** is less than **10.00**. These criteria indicate that the independent variables do not exhibit excessive intercorrelation, allowing each variable to contribute uniquely to the regression model. The results of the multicollinearity test are presented in **Table 2**.

Table 2. Multicollinearity Test

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	9.314	2.919		3.191	.002		
	Digital Leadership	.252	.096	.228	2.619	.000	.929	1.077
	Online Training	.307	.090	.297	3.405	.001	.929	1.077
a. Dependent Variable: Employee performance								

Source: Data processed, SPSS (2025)

Based on the results of the multicollinearity test, both independent variables have a **Tolerance** value of **0.929**, which is greater than the recommended threshold of **0.10**, indicating the absence of multicollinearity. Similarly, the **Variance Inflation Factor (VIF)** for both variables is **1.077**, which is well below the maximum acceptable value of **10.00**. These results confirm that there is no significant correlation between the independent variables. Therefore, it can be concluded that the regression model is free from multicollinearity, indicating that each independent variable contributes uniquely to explaining employee performance.

Coefficient of Determination (R2)

Table 3. R-square analysis results

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.744[a]	.554	.549	4.635
a. Predictors: (Constant), Online Training, Digital Leadership				

Source: Data processed, SPSS (2025)

Coefficient of Determination (R^2)

Based on **Table 4**, the coefficient of determination (**R^2**) is **0.554**, indicating that **digital leadership** and **online training** jointly explain **55.4%** of the variation in employee performance. The remaining **44.6%** of the variation is influenced by other factors that were not included in the research model. These findings suggest that both independent variables provide substantial explanatory power in predicting employee performance in remote work environments.

Multiple Linear Regression Analysis

Multiple linear regression analysis was employed to examine the simultaneous influence of **Digital Leadership (X_1)** and **Online Training (X_2)** on **Employee Performance (Y)** in remote work areas. This analytical technique allows the researcher to assess the individual contribution of each independent variable while also evaluating their combined effect on the dependent variable. The results of the multiple linear regression analysis are presented in

Table 4. Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients
		B	Std. Error	Beta
1	(Constant)	18.443	2.693	
	Digital Leadership	.525	.061	.441
	Online Training	.514	.056	.471

a. Dependent Variable: Employee Performance

Source: Data processed, SPSS (2025)

Multiple Linear Regression Results

Based on the results of the multiple linear regression analysis, both independent variables—**Digital Leadership (X_1)** and **Online Training (X_2)**—have positive regression coefficients, indicating a positive relationship with **Employee Performance (Y)**. This means that improvements in digital leadership practices and the quality of online training are associated with higher levels of employee performance. In other words, increases in either digital leadership or online training are expected to contribute positively to employee performance in remote work environments.

Hypothesis Testing

Partial Significance Test (t-test)

The **t-test** was conducted to examine the partial effect of each independent variable on the dependent variable. According to Ghozali (2011), a variable is considered to have a significant effect when the significance value is less than **0.05** and the calculated **t-value (t-count)** exceeds the critical **t-table** value. Conversely, if the significance value is greater than **0.05** and the calculated **t-value** is lower than the **t-table** value, the null hypothesis is accepted. The results of the partial hypothesis testing (t-test) are presented in **Table 5**.

Table 5. T Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	18.443	2.693			
	Digital Leadership	.525	.061	.441	8.576	.000

	Online Training	.514	.056	.471	9.158	.000
a. Dependent Variable: Employee Performance						

Source: Data processed, SPSS (2025)

Results of the Partial Significance Test (t-test)

Based on the results presented in **Table 6**, the calculated **t-value** for **Digital Leadership** is **8.578**, while the calculated **t-value** for **Online Training** is **9.158**. Both values are greater than the critical **t-table** value of **1.286**, and each variable has a significance value of **0.000**, which is lower than the significance level of **0.05**. These findings indicate that both **Digital Leadership** and **Online Training** have positive and statistically significant partial effects on **Employee Performance**. Therefore, the first and second research hypotheses are supported.

Simultaneous Significance Test (F-test)

The **F-test** was conducted to examine the simultaneous effect of all independent variables on the dependent variable. According to Ghozali (2012), the regression model is considered statistically significant when the significance value is less than **0.05** and the calculated **F-value (F-count)** is greater than the critical **F-table** value. Under these conditions, the null hypothesis is rejected, indicating that the independent variables jointly influence the dependent variable. The results of the simultaneous hypothesis testing (F-test) are presented in **Table 6**.

Table 6. F Test

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5068.736	2	2534.368	117.948	.000
	Residual	4082.570	190	21.487		
	Total	9151.306	192			
a. Dependent Variable: Employee Performance						
b. Predictors: (Constant), Online Training, Digital Leadership						

Source: Data processed, SPSS (2025)

Based on the results presented in **Table 7**, the calculated **F-value** is **117.948**, which is substantially higher than the critical **F-table** value. In addition, the significance value is **0.000**, which is lower than the significance level of **0.05**. These results indicate that **Digital Leadership (X_1)** and **Online Training (X_2)** simultaneously have a positive and statistically significant effect on **Employee Performance (Y)**. Therefore, the regression model is considered statistically significant, and the third research hypothesis is accepted. This finding suggests that the combined implementation of effective digital leadership and continuous online training plays a crucial role in improving employee performance in remote work environments.

DISCUSSION

The Effect of Digital Leadership on Employee Performance

The results of this study demonstrate that digital leadership has a positive and significant effect on employee performance in remote work areas. The regression analysis shows a positive coefficient of 0.525, while the t-test result ($t = 8.576$, $p < 0.001$) confirms that digital leadership significantly influences employee performance. These findings indicate that employees who perceive their leaders as capable of utilizing digital technologies, communicating effectively through digital platforms, and facilitating organizational adaptation tend to exhibit higher levels of performance.

This finding supports the concept proposed by Siagian (2019), who argues that digital leadership is the ability of leaders to guide organizational transformation by strategically integrating digital technologies into organizational processes. Likewise, Cahyarini (2021) emphasizes that leaders with a digital mindset are better equipped to encourage innovation, improve collaboration, and facilitate employees' adaptation to technological changes. In remote work environments, where face-to-face interaction is limited, digital leadership becomes increasingly important because leaders must rely on digital communication, virtual coordination, and technology-based decision-making to maintain employee engagement and productivity.

The findings also explain the decline in employee performance observed at BPJS Ketenagakerjaan Regional Office Sumbagut. The decrease in performance indicators, particularly integrity and service orientation, may reflect insufficient leadership support in managing employees within a digital working environment. Effective digital leaders are expected to provide clear direction, timely feedback, and continuous support while encouraging employees to utilize digital technologies efficiently. Therefore, strengthening digital leadership competencies among managers is essential for improving employee performance in remote work settings.

The Effect of Online Training on Employee Performance

The analysis further reveals that online training has a positive and significant effect on employee performance, with a regression coefficient of 0.514 and a t-value of 9.158 ($p < 0.001$). Interestingly, the standardized coefficient indicates that online training exerts a slightly stronger influence on employee performance than digital leadership. This finding suggests that employees' competencies and technical capabilities play a critical role in determining their effectiveness when performing tasks in remote work environments.

This result is consistent with Asari et al. (2023), who state that training is an educational process designed to develop employees' competencies for current and future job responsibilities. Similarly, Fauzan et al. (2023) argue that effective training improves employees' knowledge, technical skills, and work abilities, enabling them to perform their duties more efficiently. In digital work environments, continuous online training allows employees to update their technological competencies without being constrained by geographical location or working schedules.

The stronger influence of online training indicates that competency development remains one of the most effective human resource strategies for improving employee performance. Employees who receive relevant and continuous online training are more likely to adapt quickly to technological changes, solve work-related problems independently, and maintain productivity despite working remotely. Therefore, organizations should invest in comprehensive online learning programs that are aligned with employees' competency needs and organizational objectives.

The Simultaneous Effect of Digital Leadership and Online Training on Employee Performance

The simultaneous hypothesis testing demonstrates that digital leadership and online training jointly have a positive and significant effect on employee performance. The F-test result ($F = 117.948$, $p < 0.001$) confirms that the regression model is statistically significant. Furthermore, the coefficient of determination ($R^2 = 0.554$) indicates that digital leadership and online training together explain **55.4%** of the variance in employee performance, while the remaining **44.6%** is influenced by other variables not included in this study.

These findings suggest that employee performance in remote work environments cannot be enhanced solely through leadership or training independently. Instead, both factors complement one another in creating a productive digital workplace. Digital leadership provides strategic direction, facilitates communication, and encourages employees to embrace organizational change, while online training equips employees with the competencies required to perform effectively within technology-driven work environments. When implemented simultaneously, these factors create organizational synergy that enables employees to perform more efficiently and adapt more successfully to digital transformation.

The findings also support the broader perspective of human resource development, which emphasizes that employee performance is influenced by both organizational support and individual competency development. Organizations that invest in capable digital leaders while simultaneously providing continuous learning opportunities are more likely to achieve sustainable improvements in employee performance. This is particularly important for public service institutions such as BPJS Ketenagakerjaan, where service quality, organizational responsiveness, and operational efficiency depend heavily on employees' ability to adapt to rapidly evolving digital technologies.

Overall, this study contributes to the growing body of literature on digital human resource management by providing empirical evidence that both digital leadership and online training are significant determinants of employee performance in remote work environments. The findings also provide practical implications for organizational management, suggesting that efforts to improve employee performance should focus on strengthening leaders' digital competencies while expanding continuous online training programs that address employees' evolving technological and professional development needs.

CONCLUSION

Based on the results of the data analysis and discussion, this study concludes that digital leadership and online training significantly influence employee performance in remote work areas at BPJS Ketenagakerjaan Regional Office Sumbagut. First, digital leadership has a positive and significant effect on employee performance, indicating that leaders who effectively utilize digital technologies, facilitate virtual communication, and support employees in adapting to digital work environments can substantially improve employee performance. Second, online training also has a positive and significant effect on employee performance and demonstrates a slightly stronger influence than digital leadership. This finding suggests that continuous competency development through relevant online training programs plays a crucial role in enabling employees to perform effectively in technology-driven work settings. Finally, digital leadership and online training simultaneously have a positive and significant effect on employee performance, jointly explaining **55.4%** of the variation in employee performance, while the remaining **44.6%** is influenced by other factors beyond the scope of this study.

The findings contribute theoretically to the literature on digital human resource management by providing empirical evidence that effective digital leadership and continuous online training are essential drivers of employee performance in remote work environments. From a practical perspective,

BPJS Ketenagakerjaan Regional Office Sumbagut should strengthen digital leadership competencies among managers, expand competency-based online training programs, and integrate both initiatives into a comprehensive human resource development strategy. Such efforts are expected to improve employee adaptability, productivity, and service quality while supporting the organization's ongoing digital transformation. Future research is recommended to examine additional factors influencing employee performance, such as digital competence, employee engagement, organizational culture, work motivation, or technology acceptance, in order to develop a more comprehensive understanding of performance in remote work settings.

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