

The Effect of Occupational Safety and Work Environment on Employee Performance

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ABSTRACT

Employee performance is one of the primary determinants of organizational success, particularly in companies operating in high-risk industries such as electricity services. This study aims to analyze the influence of occupational safety and health and the work environment on employee performance at PT PLN (Persero) ULP Sutojayan, Blitar Regency. This research employed a quantitative explanatory approach involving all 70 employees as respondents using a census sampling technique. Data were collected through questionnaires using a Likert scale and analyzed using multiple linear regression, supported by validity, reliability, classical assumption, t-test, F-test, and coefficient of determination analyses. The findings reveal that occupational safety and health significantly improve employee performance. Likewise, the work environment has a positive and significant effect on employee performance. Simultaneously, both variables contribute significantly to employee performance improvement. These findings indicate that an effective occupational safety management system combined with a supportive work environment enhances employee productivity, work quality, and organizational performance. The study contributes empirical evidence regarding human resource management in the electricity service sector and provides managerial implications for strengthening workplace safety culture and creating conducive working conditions.

Keywords: Occupational Safety and Health, Work Environment, Employee Performance

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INTRODUCTION

Human resources are widely recognized as the most valuable asset for achieving organizational objectives and maintaining sustainable competitive advantage. Regardless of technological advancement, organizational success remains highly dependent on employees' ability to perform effectively and efficiently. Consequently, organizations are required not only to improve employees' competencies but also to establish working conditions that ensure safety, comfort, and motivation. Employee performance therefore becomes one of the most important indicators of organizational effectiveness because it reflects productivity, service quality, and organizational competitiveness (Kasmir, 2019).

In the current era of industrial transformation, organizations face increasingly complex operational risks, particularly companies operating in infrastructure and public

utility sectors. Electric utility companies represent one of the industries characterized by high occupational hazards because employees routinely interact with electrical installations, transmission systems, and field operations that expose them to considerable safety risks. Consequently, occupational safety and health have become strategic organizational priorities rather than merely legal obligations. An effective occupational safety system not only protects employees from workplace accidents but also enhances confidence, motivation, and productivity (Mangkunegara, 2017).

Occupational Safety and Health (OSH) refers to a systematic effort to prevent occupational accidents and work-related illnesses while ensuring employees' physical, psychological, and social well-being. The implementation of OSH has become increasingly important because workplace accidents may cause financial losses, operational disruption, employee absenteeism, and declining organizational productivity. According to the International Labour Organization (ILO), effective occupational safety management contributes significantly to sustainable organizational development by reducing work-related risks and improving employees' overall performance (Aprilliani et al., 2022). In Indonesia, the implementation of occupational safety is also legally mandated through Law Number 1 of 1970 concerning Occupational Safety and Government Regulation Number 50 of 2012 concerning Occupational Safety and Health Management Systems (SMK3), emphasizing employers' responsibility to provide a safe working environment.

Besides occupational safety, the work environment also plays a substantial role in determining employee performance. The work environment encompasses physical aspects such as lighting, temperature, workspace arrangement, equipment availability, and noise level, as well as non-physical aspects including interpersonal relationships, organizational culture, communication, and leadership support. A conducive work environment enables employees to perform tasks comfortably, reduces psychological stress, and improves job satisfaction, which ultimately contributes to better organizational outcomes (Sedarmayanti, 2017).

The relationship between occupational safety, work environment, and employee performance can also be explained through Maslow's Hierarchy of Needs theory. Employees whose physiological and safety needs are fulfilled tend to demonstrate stronger work motivation and higher performance. Likewise, socio-technical system theory argues that organizational performance is achieved through the integration of technical systems, including occupational safety procedures, and social systems represented by the organizational work environment. Therefore, improving workplace safety without establishing a supportive organizational climate may limit organizational performance improvement.

PT PLN (Persero) Unit Layanan Pelanggan (ULP) Sutojayan, Blitar Regency, is one of the operational units responsible for electricity distribution and customer services across a large service area. Employees frequently perform field activities involving electrical maintenance, installation, network repair, and emergency response under potentially hazardous conditions. Although the company has implemented occupational safety procedures and provided personal protective equipment, preliminary observations

indicated that workplace accidents continue to occur, primarily due to employees' negligence, non-compliance with standard operating procedures, and challenging field conditions. These conditions potentially reduce work effectiveness and organizational productivity.

Furthermore, preliminary observations revealed that the non-physical work environment within the organization is generally conducive, characterized by harmonious relationships between supervisors and employees as well as effective teamwork. Nevertheless, employees' work patterns remain relatively reactive because operational activities are predominantly initiated following customer complaints instead of preventive maintenance programs. Such conditions indicate opportunities for improving employee performance through strengthening occupational safety implementation and optimizing workplace management.

Several previous studies have demonstrated that occupational safety and the work environment positively influence employee performance (Aidi et al., 2022; Rezeki et al., 2025; Heny, 2023; Setiawan, 2021). However, empirical findings remain inconsistent across industrial sectors, organizational characteristics, and regional contexts. Most previous studies examined multiple human resource variables simultaneously, including compensation, work-life balance, and job stress, thereby providing limited understanding of the specific contribution of occupational safety and the work environment. Moreover, limited empirical evidence has been reported regarding electricity distribution units operating in regional service areas with high occupational risks, particularly PT PLN (Persero) ULP Sutojayan, Blitar Regency.

Based on these research gaps, this study specifically investigates the influence of occupational safety and the work environment on employee performance within PT PLN (Persero) ULP Sutojayan. Unlike previous studies, this research focuses exclusively on two organizational factors that are directly associated with operational risk management and employee productivity. The findings are expected to enrich the literature on human resource management within public utility organizations while providing practical recommendations for strengthening occupational safety policies and developing a more supportive work environment.

Accordingly, the objective of this study is to analyze the partial and simultaneous effects of occupational safety and the work environment on employee performance at PT PLN (Persero) ULP Sutojayan, Blitar Regency. The results are expected to provide empirical evidence for organizational decision-makers in improving employee performance through effective occupational safety management and workplace development.

METHOD

This study employed a quantitative explanatory research design to examine the causal relationship between Occupational Safety and Health (OSH), the work environment, and employee performance. Explanatory research is appropriate because it aims to test hypotheses regarding the influence of independent variables on a dependent variable through statistical analysis (Sugiyono, 2018; Ghazali, 2018). The research was conducted at

PT PLN (Persero) Unit Layanan Pelanggan (ULP) Sutojayan, Blitar Regency, an operational unit responsible for electricity distribution and customer services.

The population consisted of 70 employees working at PT PLN (Persero) ULP Sutojayan. Considering the relatively small population size, this study employed a census (total sampling) technique, whereby all employees were included as research respondents. This approach minimizes sampling error and ensures that the collected data represent the entire population.

Primary data were collected using structured questionnaires based on a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). The questionnaire measured three variables: Occupational Safety and Health (X_1), Work Environment (X_2), and Employee Performance (Y). Before hypothesis testing, the instrument was evaluated using validity and reliability tests. All questionnaire items demonstrated satisfactory validity ($r\text{-count} > r\text{-table} = 0.235$), while Cronbach's Alpha values exceeded 0.70 for all variables, indicating that the research instrument was reliable.

The collected data were analyzed using multiple linear regression analysis. Prior to regression analysis, classical assumption tests comprising normality, multicollinearity, autocorrelation, and heteroscedasticity tests were conducted to ensure the suitability of the regression model. Hypothesis testing was performed using partial (t-test) and simultaneous (F-test) analyses at a significance level of 5%, while the coefficient of determination (R^2) was employed to determine the proportion of variance in employee performance explained by the independent variables.

FINDING AND DISCUSSION

RESEARCH RESULT

The questionnaire distributed to all respondents was first evaluated to ensure data quality. The validity test indicated that every measurement item possessed a correlation coefficient greater than the critical value (0.235), confirming that all indicators accurately measured their respective constructs. Furthermore, Cronbach's Alpha coefficients ranged from 0.817 to 0.866, demonstrating satisfactory internal consistency for all research variables.

Subsequent classical assumption testing demonstrated that the regression model fulfilled the required statistical assumptions. The normality test produced an Asymp. Sig. value of 0.211, indicating normally distributed residuals. Additionally, multicollinearity, autocorrelation, and heteroscedasticity tests confirmed that the regression model was statistically appropriate for hypothesis testing.

Multiple linear regression analysis was then conducted to examine the influence of Occupational Safety and Health and the Work Environment on Employee Performance. The estimated regression equation is presented as follows:

$$Y = 3.816 + 0.673X_1 + 0.590X_2$$

The regression coefficients indicate positive relationships between both independent variables and employee performance. Occupational Safety and Health

demonstrated a regression coefficient of 0.673, while the Work Environment exhibited a coefficient of 0.590, suggesting that improvements in both variables contribute positively to employee performance.

Table 1. Multiple Linear Regression Analysis

Variable	Regression Coefficient	t-value	Sig.
Constant	3.816	2.087	0.001
Occupational Safety and Health	0.673	5.437	0.001
Work Environment	0.590	4.565	0.000

Source: Processed SPSS Output (2026).

The regression analysis reveals that Occupational Safety and Health has the largest regression coefficient, indicating that workplace safety contributes more substantially to employee performance than the work environment within the observed organization. Hypothesis testing through the partial t-test confirms that both independent variables significantly influence employee performance.

Table 2. Partial Hypothesis Testing (t-test)

Variable	t-value	Significance	Decision
Occupational Safety and Health	5.437	0.001	Accepted
Work Environment	4.565	0.000	Accepted

Source: Processed SPSS Output (2026).

The t-test results indicate that Occupational Safety and Health significantly influences employee performance ($t = 5.437$; $p = 0.001$). Likewise, the Work Environment significantly affects employee performance ($t = 4.565$; $p < 0.001$). Therefore, both proposed hypotheses are supported.

The simultaneous effect of both independent variables was further examined using the F-test.

Table 3. Simultaneous Hypothesis Testing (F-test)

F-value	Significance	Decision
33.040	0.000	Accepted

Source: Processed SPSS Output (2026).

The F-test demonstrates that Occupational Safety and Health together with the Work Environment significantly influence employee performance ($F = 33.040$; $p < 0.05$). Accordingly, the third hypothesis is accepted.

The explanatory power of the regression model was assessed using the coefficient of determination (R^2).

Table 4. Coefficient of Determination

R	R Square	Adjusted R Square
0.705	0.497	0.482

Source: Processed SPSS Output (2026).

The coefficient of determination ($R^2 = 0.497$) indicates that **49.7%** of the variation in employee performance is explained jointly by Occupational Safety and Health and the Work Environment. The remaining **50.3%** is attributable to other variables beyond the scope of this study, such as leadership, work motivation, organizational culture, compensation, or employee competence.

DISCUSSION

Occupational Safety and Health and Employee Performance

The findings demonstrate that Occupational Safety and Health (OSH) has a positive and significant influence on employee performance at PT PLN (Persero) ULP Sutojayan. Employees who perceive the workplace as safe and supported by adequate safety procedures tend to exhibit higher productivity, greater work accuracy, and stronger commitment to organizational objectives. This finding indicates that the implementation of occupational safety is not merely intended to prevent workplace accidents but also serves as an essential strategy for improving organizational performance.

In an electricity service company, employees routinely perform tasks involving electrical installations, network maintenance, and emergency response, all of which involve considerable occupational risks. Under such conditions, the availability of personal protective equipment (PPE), compliance with standard operating procedures, and continuous occupational safety training become critical factors influencing employees' confidence while performing their duties. When employees perceive that the organization prioritizes their safety, they are more likely to work efficiently without excessive concern about occupational hazards.

These findings support Maslow's Hierarchy of Needs Theory, which emphasizes that safety constitutes one of the fundamental human needs. Employees whose safety needs are fulfilled generally experience greater psychological security, allowing them to concentrate more effectively on achieving work targets. Similarly, the findings are consistent with the concept of strategic human resource management, which argues that employee well-being contributes directly to organizational productivity and competitive advantage.

The results are also consistent with previous studies conducted by Aidi et al. (2022), Setiawan (2021), and Heny (2023), all of which concluded that occupational safety significantly improves employee performance. The consistency of these findings across different organizational settings suggests that occupational safety represents a universal determinant of employee performance, particularly in industries characterized by high operational risks.

From a managerial perspective, these findings indicate that PT PLN (Persero) ULP Sutojayan should continuously strengthen its occupational safety culture through regular safety training, routine supervision, compliance monitoring, and periodic evaluation of safety management systems. Such initiatives are expected not only to reduce workplace accidents but also to improve employees' productivity and service quality.

Work Environment and Employee Performance

The findings further reveal that the work environment significantly influences employee performance. A supportive work environment enables employees to perform their responsibilities more effectively by creating comfortable physical conditions and fostering positive interpersonal relationships within the organization.

The work environment comprises both physical and non-physical dimensions. Physical aspects include lighting, workplace layout, ventilation, cleanliness, and availability of work equipment, whereas non-physical aspects encompass communication, teamwork, organizational culture, and leadership support. The findings suggest that both dimensions collectively contribute to improved employee performance because they create working conditions conducive to concentration, collaboration, and job satisfaction.

This result is consistent with Sedarmayanti's Work Environment Theory, which states that favorable workplace conditions enhance employee motivation and productivity. Comfortable work facilities reduce physical fatigue, while positive social interactions strengthen employee engagement and organizational commitment. Consequently, employees are better able to complete assigned tasks efficiently and effectively.

The present findings corroborate those reported by Rezeki et al. (2025), Afandi (2022), and Putri et al. (2023), who similarly found that the work environment exerts a positive influence on employee performance. The consistency of these empirical findings reinforces the importance of establishing a workplace that supports employees both physically and psychologically.

Although preliminary observations indicated that interpersonal relationships at PT PLN (Persero) ULP Sutojayan were generally harmonious, opportunities remain to further enhance the working environment through improved communication systems, digital collaboration tools, and preventive work planning. Such improvements may reduce operational pressure associated with reactive service delivery and promote greater organizational effectiveness.

Simultaneous Effect of Occupational Safety and Health and Work Environment

The simultaneous analysis demonstrates that Occupational Safety and Health and the Work Environment jointly exert a significant influence on employee performance. This finding implies that employee performance is not determined by a single organizational factor but rather by the interaction between workplace safety and organizational working conditions.

The coefficient of determination indicates that approximately 49.7% of the variation in employee performance can be explained by these two variables. Although this

proportion is substantial, it also suggests that employee performance is influenced by additional organizational factors, including leadership style, work motivation, compensation systems, organizational culture, employee competence, and career development opportunities.

The findings support the Socio-Technical Systems Theory, which argues that organizational effectiveness depends upon the integration of technical systems and social systems. Occupational safety represents the technical component through standardized procedures and risk management, whereas the work environment reflects the social component involving communication, organizational culture, and teamwork. Organizations that successfully integrate these dimensions are more likely to achieve higher employee performance and sustainable organizational effectiveness.

From a practical perspective, PT PLN (Persero) should adopt an integrated human resource management strategy that combines occupational safety enhancement with workplace improvement initiatives. Such integration is expected to strengthen employee commitment, reduce operational risks, and improve overall service quality.

Research Implications

This study contributes both theoretically and practically. Theoretically, it enriches the literature on human resource management by providing empirical evidence regarding the influence of Occupational Safety and Health and the Work Environment on employee performance within the electricity service industry, a sector characterized by relatively high occupational risks. Practically, the findings provide useful recommendations for managers to prioritize occupational safety programs, improve workplace facilities, strengthen communication, and foster a positive organizational climate as strategic efforts to enhance employee performance.

Research Limitations

Despite its contributions, this study has several limitations. First, the research was conducted in only one organizational unit of PT PLN (Persero), thereby limiting the generalizability of the findings to other regions or organizational contexts. Second, the study examined only two independent variables, whereas employee performance is influenced by numerous additional factors, including leadership, organizational culture, compensation, work engagement, and employee competence. Third, the research employed a cross-sectional design that captures organizational conditions at a single point in time, making it difficult to observe long-term changes in employee performance.

Future studies are therefore encouraged to involve multiple organizational units, include additional explanatory variables, and employ longitudinal research designs to obtain more comprehensive insights into the determinants of employee performance.

CONCLUSION

This study concludes that Occupational Safety and Health and the Work Environment significantly influence employee performance at PT PLN (Persero) ULP

Sutojayan, both individually and simultaneously. Occupational Safety and Health contributes positively by providing employees with a secure working environment that enhances confidence, minimizes occupational risks, and improves productivity. Likewise, a supportive work environment characterized by adequate physical facilities and positive interpersonal relationships enables employees to perform their duties more effectively and efficiently.

Simultaneously, both variables explain a substantial proportion of employee performance, highlighting the importance of integrating occupational safety management with workplace improvement strategies. Accordingly, PT PLN (Persero) should continuously strengthen its occupational safety culture, improve workplace facilities, and foster effective organizational communication to enhance employee performance and organizational effectiveness. Future research is recommended to incorporate additional organizational variables and broader research settings to enrich empirical understanding of employee performance determinants.

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