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The Effect of Implementing K3 (Occupational Safety and Health) on Employee Performance of PT OHM Elektronik Jababeka Cikarang

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Abstract: *Background: The high risk of accidents in the electronics industry demands an effective Occupational Safety and Health (OSH) system. Objective: Measure the influence of behavior-based training, incident reporting systems, and adaptive evaluation on productivity, discipline, and quality of work. Method: Associative quantitative design with purposive sampling of 30 production operators. Instrument: Likert scale closed questionnaire based on five OSH indicators and five performance indicators. Analysis techniques: Descriptive statistics, Shapiro–Wilk normality test, Glejser heteroscedasticity test, simple linear regression, t-test, and coefficient of determination (R^2). Result: Regression equation Y=2.504+0.937X+eY=2,504+0,937X+e; OSH had a significant positive effect (t=15,399; p<0.001) and explained 89.4% of performance variation. Conclusions: Improved OSH implementation promotes employee performance; companies are advised to maintain behaviour-based training and adaptive safety evaluation.*

Keywords: *Behavior-Based Training, Employee Performance, Occupational Health and Safety, Safety Culture, Workplace Safety*

Introduction

Research Phenomenon

Manufacturing industries including PT OHM Elektronik Jababeka Cikarang have a high risk of work accidents due to the use of electric voltage machines, exposure to chemicals, and high-speed production environments (Mutegi, 2023; Hasanah, Fuady, & Yuniarti, 2024). The implementation of OSH systems based on international standards such as ISO 45001 has been shown to increase employee productivity and reduce accident rates in various manufacturing contexts (Mutegi, 2023; Al Fashshi & Dudija, 2025). In addition, global trends show that organizations with a *strong safety culture* can encourage employees to actively participate in safety procedures, thereby minimizing operational disruption and improving product quality (Al Fashshi & Dudija, 2025; Hasanah, Fuady, & Yuniarti, 2024).

Research Problems

At PT OHM Elektronik Jababeka Cikarang, K3 procedures are often only documented administratively without being internalized in employees' daily behavior, so safety practices are not yet fully reflected in work discipline and quality output (Roring, Tumbel, & Asaloei, 2023; Siddiqui & Wijayanti, 2024). These gaps give rise to a failure of

proactive hazard detection and the continued appearance of minor incidents with an impact on productivity.

Research Problems

Previous research has also shown that OSH training is still theoretical and less behavior-based, so its effectiveness is limited in increasing employee commitment to safety (Jiwantoro, 2024; Lindawati, 2024). As a result, the company struggled to establish a safety evaluation system responsive to the dynamics of risks in the field.

Research Objectives, Urgency, and Novelty

This research aims to measure the influence of K3 implementation, including behavioral training, incident reporting systems, and adaptive evaluation of employee performance in terms of productivity, discipline, and work quality. The urgency of research lies in the immediate need to reduce the risk of accidents and increase operational efficiency in the electronics manufacturing sector, especially in the Jababeka Cikarang industrial area. The novelty of this research lies in the integration of behavior-based K3 instruments with adaptive evaluation systems designed to internalize safety values in the work culture of PT OHM Elektronik employees.

Methodology

The research method is a series of scientific activities to obtain valid data according to the objectives and uses of the research (Sugiyono, 2023; Sudaryono, 2018). This research uses a quantitative approach with an associative design, aimed at testing the effect of K3 (Occupational Safety and Health) implementation on the performance of PT OHM Elektronik Jababeka Cikarang employees (Creswell & Creswell, 2018; Emzir, 2013). Primary data was collected through a closed questionnaire on a Likert scale to measure variable X (K3) and variable Y (employee performance), while secondary data was obtained from internal company documentation, SOP reports, and related publications as analytical reinforcement (Sudaryono, 2018; Emzir, 2013).

Research instruments in the form of question items based on K3 indicators (use of PPE, safety facilities, K3 training, incident reporting system, safe work environment) and performance indicators (productivity, discipline, work quality, attendance, procedural compliance) were prepared according to Mangkunegara's operational definition (2019) and tested for reliability using correlation tests and Cronbach's alpha (Sugiyono, 2023; Emzir, 2013). Data analysis techniques include descriptive statistics, classical assumption tests (normality with Shapiro–Wilk, heteroscedasticity with Glejser), simple linear regression, as well as hypothesis tests (partial t-test) and coefficient of determination (R^2) to assess the strength of OSH influence on performance (Sugiyono, 2023; Creswell & Creswell, 2018).

The research population is all employees of the production operator PT OHM Elektronik Jababeka Cikarang who have worked for a minimum of six months and are directly involved in the manufacturing process (Sudaryono, 2018; Cresswell & Plano Clark, 2021). Samples were selected using a purposive sampling technique of 30 respondents according to inclusion criteria and exclusion criteria to ensure the suitability of work experience for K3 implementation (Sugiyono, 2023; Sudaryono, 2018).

The research procedure includes the instrument preparation stage (compilation of questionnaire items and trials), field data collection in April–May 2025 at the research location, data processing through statistical software (SPSS), testing classical assumptions, regression analysis, and interpretation of results. Each step is carried out according to quantitative methodology guidelines and mixed methods to ensure the reliability and validity of the findings (Creswell & Creswell, 2018; Sugiyono, 2023).

Results and Discussion

Validity Test

Table 1. OSH Test Results

No	r count	r table	Description
1	0.572	0.444	Valid
2	0.656	0.444	Valid
3	0.863	0.444	Valid
4	0.869	0.444	Valid
5	0.604	0.444	Valid
6	0.558	0.444	Valid
7	0.727	0.444	Valid
8	0.629	0.444	Valid
9	0.729	0.444	Valid

Based on the results of Table 1 above, which have been analyzed using SPSS version 25, all K3 (Occupational Safety and Health) statement indicators proposed in this research have a calculated r value greater than the r table value of 0.444. Thus, it can be concluded that all the statement indicators in this study are statistically valid.

Table 2. Employee Performance Test Results

No	r count	r table	Description
1	0.753	0.444	Valid
2	0.887	0.444	Valid
3	0.790	0.444	Valid
4	0.674	0.444	Valid
5	0.709	0.444	Valid
6	0.925	0.444	Valid
7	0.620	0.444	Valid
8	0.840	0.444	Valid
9	0.758	0.444	Valid

Based on the results of Table 2 above, which have been analyzed using SPSS version 25, all the Employee Performance statement indicators proposed in this study have a calculated r value greater than the table r value, namely 0.444. Thus, it can be concluded that all the statement indicators in this study are statistically valid.

Reliability Test

Table 3. Test Results

No	Variable	*Cronbach's Alpha*	Criterion	Description
1	OSH (Occupational Safety and Health)	0.860	0.70	Reliable
2	Employee Performance	0.914	0.70	Reliable

The results of the reliability test show that the K3 variable (Occupational Safety and Health) has a *Cronbach's Alpha* of 0.860, and the Employee Performance variable has a Cronbach's Alpha of 0.914. Thus, it can be concluded that all variables have an *alpha coefficient* above 0.70. This means that all statements in the questionnaire for each variable can be said to be reliable and worthy of use as a measuring tool.

Normality Test

Table 4. Test Results

Variable	**N**	**Statistik *Shapiro Wilk***	***Sig. P-value***	**Conclusion**
OSH: Occupational Safety and Health (X)	30	0.970	0.547	Normally distributed data
Employee Performance (Y)	30	0.968	0.478	Normally distributed data

Based on this data, using the test methods *Shapiro-Wilk*, for the variable K3: Occupational Safety and Health (X), the results of Sig are obtained. P-value of 0.547, which is greater than 0.05, *and* for the Employee Performance variable (Y), the Sig results are obtained. The P-value is 0.478. So it can be concluded that the data has a normal distribution.

Heteroscedasticity Test

Table 5. Test Results

No	**Variable**	***Unstandardized Residual Sig.(2-tailed)***
1	K3: Occupational Safety and Health (X)	0.687

Based on Table 5, the results of the heteroscedasticity test using the Glejser method are shown in the unstandardized residual sig. (2-tailed) column which shows a significance value of 0.687, greater than 0.05. It can be concluded, then, that there is no indication of heteroscedasticity in the regression model.

Simple Linear Regression Analysis

Table 6. Analysis Results

Coefficienta					
	Unstandardized Coefficient		*Standardized Coefficient*		
Model	B	*Std. Error*	*Beta*	t	Sig
1. (Constant)	2,504	2,429		1,031	.312
K3	0.937	0.061	.946	15,399	0.000

From the results of the multiple linear regression analysis that has been carried out, the coefficient value for the variable K3: Occupational Safety and Health (X) is obtained at 0.937. Thus, the regression equation obtained is as follows:

Y = 2,504 + 0.937X + e

1. Constant = 2.504

   This means that if the value of the K3 (Occupational Safety and Health) variable is 0, then the employee performance level will reach 2,504.

2. Regression coefficient value = 0.937

   Showing that for every one increase, the unit in implementing K3 will increase employee performance by 0.937 or 93.7%. Since the values of the regression coefficients are positive, it can be concluded that there is a positive influence of the OSH variables on employee performance. This means that the better the application of occupational safety and health, the more employee performance will be improved.

Test t

Table 7. Test Results

Model	Variable	t	Sig.
1	(Constant)	1,031	0.312
	K3: Occupational Safety and Health (X)	15,399	0.000

Based on the results of the partial t-test, a calculated t-value of 15.399, greater than the t-table 2.046, and a significance value (Sig.) of 0.000, smaller than 0.05, were obtained. Thus, it can be concluded that occupational safety and health variables (OSH) significantly influence employee performance. This means that the better the implementation of K3, the more positive the impact on improving employee performance.

R Square Test

Table 8. Test Results

Simmaryb Model			
Model	*R*	*R Square*	*Adjusted R Square*
1	0.946[a]	0.894	0.643
a. Predictor: (Constant), K3: Occupational Safety and Health (X)			

Based on the results of the regression analysis, a determination coefficient value of R^2 of 0.894 was obtained. This shows that 89.4% of the variation that occurs in employee performance can be explained by the Occupational Safety and Health (OSH) variable, while the remaining 10.6% is influenced by other factors that were not studied in this study.

Discussion

The research results show that there is a positive influence of the application of Occupational Safety and Health (K3) on employee performance at PT OHM Elektronik Jababeka Cikarang. This finding is in line with the theory put forward by Mangkunegara (2019), that safe and healthy working conditions will increase employees' sense of security, psychological comfort, and morale, which ultimately has an impact on increasing productivity and individual performance.

Based on questionnaire and observation data, the application of OSH in companies has included the use of personal protective equipment (PPE), the provision of safety facilities such as fire extinguishers and evacuation routes, regular OSH training, and a clean and organized work environment. Employees also show a high level of compliance with applicable safety procedures, which indicates the internalization of OSH values in the company's work culture. The results of statistical tests show that OSH contributes significantly to performance aspects such as punctuality, productivity, and work responsibility. This corroborates the opinion of Costella et al. (2020), who emphasize that the success of OSH programs depends not only on technical aspects but also on the behavioral dimensions and active employee involvement. Thus, effective implementation of OSH is not only a normative obligation, but rather a strategic factor that can encourage continuous performance improvement. These findings also strengthen the results of previous research by Muslimin and Wahyudi (2025), which stated that implementing K3 can consistently increase work efficiency, reduce absenteeism rates, and improve the quality of production results. Therefore, the results of this research are not only theoretically relevant, but also make a practical contribution to companies in managing human resources through an occupational safety approach that is integrated with the operational management system.

Implementation of Occupational Safety and Health (K3)

Based on the results of data collection through questionnaires and direct observations in the field, it is known that the implementation of the Occupational Safety and Health (K3) program at PT OHM Elektronik Jababeka Cikarang has gone quite well and is structured. This is reflected in several key aspects of the implementation of OSH in companies.

1. The use of Personal Protective Equipment (PPE) such as masks, gloves, and safety shoes has become part of employees' daily work routines.
2. The company provides a variety of work safety facilities, such as clear evacuation routes, easily accessible fire extinguishers, and hazard warning boards installed at strategic points

3. Training and dissemination related to OSH are carried out regularly to increase employee awareness and preparedness for potential work risks.
4. The company already has a work accident reporting system that allows every incident to be recorded and followed up with appropriate procedures.
5. Working environmental conditions are kept clean, organized, and with minimal risk of danger, which reflects a commitment to the creation of a safe and healthy workplace.

Overall, these findings show that the company has taken active and systematic steps to maintain the safety and health of its workforce as an integral part of the company's operations.

Employee Performance

Research data shows that overall, the majority of PT OHM Elektronik Jababeka Cikarang employees have relatively good performance based on five main indicators.

1. Work productivity shows an increasing trend, which is reflected in consistent, stable output and in accordance with the Company's quality standards
2. The level of employee discipline is relatively good, as can be seen from compliance with working hours, the use of personal protective equipment (PPE), and company regulations.
3. Work quality has improved, characterized by increased precision, efficiency, and accuracy in completing production tasks.
4. The employee attendance rate is quite high, which indicates commitment and responsibility for the job.
5. Most employees have demonstrated compliance with operational work procedures, both in carrying out work instructions, maintaining safety standards, and following technical rules that apply in the work environment.

These findings overall reflect that the implementation of a structured and safety-based work system also supports positive performance achievements at the individual and organizational levels.

Relationship between the Application of OSH and Employee Performance

The results of a simple linear regression test reinforce the empirical finding that:

1. The implementation of OSH has a significant effect on employee performance, with a significance value < 0.05
2. The determination coefficient (R^2) is 0.894, meaning that 89.4% of employee performance is influenced by the implementation of K3, while the rest is influenced by other factors such as motivation, leadership, or compensation systems

These findings are in line with previous research (Muslimin, M. & Wahyudi, R. 2025), who concluded that occupational safety and health have a significant influence on labor productivity and performance.

Implications and Confirmation of Findings

Implementing K3 is not only administrative compliance, but has proven capable of:

1. Increase work efficiency and effectiveness
2. Lowering the risk of accidents and losses due to operational errors
3. Building employee loyalty and morale
4. Assist the company in maintaining stable production performance

Conclusion

The research results show that the implementation of Occupational Safety and Health (K3) at PT OHM Elektronik Jababeka Cikarang has a positive and significant influence on employee performance. Simple regression analysis yielded equations Y=2.504+0.937X+eY=2,504+0,937*X*+*e*, with a regression coefficient value of 0.937, which indicates that every increase in one K3 implementation unit will increase employee performance by 93.7 percent. Determination coefficient R2*R*2 of 0.894 revealed that 89.4 per cent of employee performance variations could be explained by OSH variables, while the remaining 10.6 per cent were affected by other factors such as motivation, leadership, or compensation systems. The instrument validity and reliability tests showed all indicators to be valid and reliable, and the classical assumptions were met—data were normally distributed and heteroscedasticity did not occur.

This study has the limitation of a sample involving only 30 employees of the production operator, so that the generalization of the findings to the entire population of employees of electronics manufacturing needs to be done with caution. In addition, other allegedly influential variables such as managerial support, intrinsic motivation, and incentive systems were not studied in depth. For further research, it is recommended to expand the sample to include various divisions and similar companies, as well as include mediation or moderation variables to reveal the mechanisms of OSH influence on performance. In practical terms, companies are expected to continue developing behaviour-based OSH programmes, increasing the frequency of training, and establishing adaptive and participatory safety evaluation systems to ensure the internalisation of safety values in the work culture. The implementation of these measures will strengthen the competitiveness of enterprises through improving the productivity, discipline, and quality of employees' work results.

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