


Determination of Factors Affecting Workers' Compliance With Occupational Health and Safety Culture in the IV Palu Bridge Construction Project of PT Waskita Karya (Persero) TBK

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Article Info	ABSTRACT
Keywords: Employee Compliance, K3 Culture, Knowledge, Supervision, Work Experience.	This study aims to analyze factors related to worker compliance in implementing occupational safety and health (OHS) culture in the Palu City Bridge Construction Project Area IV at PT. Waskita Karya (Persero) Tbk. The study used a quantitative design with a cross-sectional approach. The study sample consisted of 119 construction worker respondents selected using the Slovin formula. Data were collected through questionnaires and analyzed using univariate and bivariate tests. The results showed that knowledge ($p=0.303$) and work experience ($p=0.592$) were not significantly related to worker compliance in implementing an OHS culture. In contrast, supervision ($p=0.001$) was shown to have a significant relationship to worker compliance. These findings emphasize the importance of increasing supervision in the work environment, one of which is through the addition of safety officers in each project area, to strengthen the implementation of an OHS culture in the construction sector.
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INTRODUCTION

Occupational safety and health (OSH) is a fundamental aspect in ensuring the protection of workers from the risk of accidents and occupational diseases. According to the International Labour Organization (ILO), each year approximately 2.78 million workers die from work-related accidents or diseases, with more than 380,000 of these cases being caused by workplace accidents. Furthermore, there are approximately 375 million cases of non-fatal accidents that seriously impact worker welfare and company productivity. In Indonesia, the number of workplace accidents also continues to increase. Data from the Social Security Agency (BPJS Ketenagakerjaan) shows the number of cases rose from 123,040 in 2017 to 234,270 in 2021. In Central Sulawesi, 691 cases of workplace accidents were recorded in

2019 with claims reaching more than IDR 10 billion. This fact confirms the still low implementation of OSH culture in various sectors, particularly in the construction sector, which has a high risk of workplace accidents.

Various regulations, such as Government Regulation No. 50 of 2012 concerning the Occupational Health and Safety Management System (SMK3) and SNI ISO 45001:2018, have been established as a reference for companies to create a safe, efficient, and productive work environment. However, implementation in the field still faces obstacles, especially in construction projects. A preliminary study in the construction area of the Palu City Bridge IV project of PT Waskita Karya (Persero) Tbk showed that there were still workers who smoked while working, did not use complete personal protective equipment (PPE), and lacked compliance with OHS standards.

Several factors are suspected to influence worker compliance in implementing OHS culture, including knowledge, supervision, and work experience. However, there is little research specifically analyzing the relationship between these factors among construction workers in the Palu region. Based on this background, this study aims to analyze factors related to worker compliance in implementing OHS culture in the Palu City Bridge IV construction project area of PT Waskita Karya (Persero) Tbk.

RESEARCH METHODS

This study used a quantitative design with a cross-sectional approach. The research location was the construction project area of the Palu City Bridge IV of PT Waskita Karya (Persero) Tbk. The study population was all 170 construction workers. The sample was determined using the Slovin formula with a 5% error rate, resulting in 119 respondents. The sampling technique used simple random sampling. Data collection was carried out using a structured questionnaire that included variables of compliance in the implementation of OHS culture (dependent variable), as well as knowledge, supervision, and work experience (independent variables). Data analysis was carried out univariately to describe the distribution of variables, and bivariately with the chi-square test to determine the relationship between independent variables and worker compliance in the implementation of OHS culture.

RESULTS

Respondent Distribution

Based on data obtained from the data collection and processing carried out, the results obtained are as follows

Table 1. Distribution of Respondents Based on Knowledge, Supervision, Work Experience, and Compliance

Variables	Category	n	%
Knowledge	Good	63	52.9
	Not enough	56	47.1
Supervision	Good	70	58.8

Variables	Category	n	%
Work experience	Not enough	49	41.2
	≥ 3 years	61	51.3
	< 3 years	58	48.7
K3 Compliance	Obedient	68	57.1
	Not obey	51	42.9

Source: Primary data (2025).

Table 1 Most respondents had good knowledge (52.9%), ≥ 3 years of work experience (51.3%), and compliance with OHS culture (57.1%). However, 42.9% of respondents were still not compliant in implementing OHS culture.

The Relationship between Knowledge and Employee Compliance

Based on data obtained from the data collection and processing carried out, the results obtained are as follows

Table 2. The Relationship between Knowledge and Employee Compliance

Knowledge	Compliant (n/%)	Non-Compliant (n/%)	Total	p-value
Good (n=63)	39 (61.9%)	24 (38.1%)	63	0.303
Less (n=56)	29 (51.8%)	27 (48.2%)	56	
Total	68 (57.1%)	51 (42.9%)	119	

Source: Primary data (2025).

Table 2 Most workers with good knowledge tended to be compliant (61.9%). However, chi-square test results showed no significant relationship between knowledge and worker compliance (p=0.303).

The Relationship between Supervision and Work Compliance

Based on data obtained from the data collection and processing carried out, the results obtained are as follows

Table 3. The Relationship between Supervision and Employee Compliance

Supervision	Compliant (n/%)	Non-Compliant (n/%)	Total	p-value
Good (n=70)	51 (72.9%)	19 (27.1%)	70	0.001
Less (n=49)	17 (34.7%)	32 (65.3%)	49	
Total	68 (57.1%)	51 (42.9%)	119	

Source: Primary data (2025).

Table 3 Supervision had a significant influence on worker compliance (p=0.001). Workers who received good supervision were more compliant (72.9%) compared to those who received poor supervision (34.7%).

Relationship between work experience and work compliance

Based on data obtained from the data collection and processing carried out, the results obtained are as follows

Table 4. The Relationship between Work Experience and Employee Compliance

Work Experience	Compliant (n/%)	Non-Compliant (n/%)	Total	p-value
≥ 3 years (n=61)	37 (60.7%)	24 (39.3%)	61	

Work Experience	Compliant (n/%)	Non-Compliant (n/%)	Total	p-value
< 3 years (n=58)	31 (53.4%)	27 (46.6%)	58	0.592
Total	68 (57.1%)	51 (42.9%)	119	

Source: Primary data (2025).

Table 4 The majority of workers with ≥ 3 years of work experience (60.7%) comply with the implementation of the OHS culture. However, chi-square test results showed no significant relationship between work experience and compliance ($p=0.592$).

Discussion

The results of this study indicate that supervision factors have a significant relationship with worker compliance in implementing OHS culture in the construction project area of Bridge IV, Palu City, PT Waskita Karya (Persero) Tbk, while knowledge and work experience are not significantly related. This finding indicates that worker compliance is more influenced by external controls than by internal worker factors.

The Relationship Between Knowledge and Compliance

The analysis showed no significant relationship between knowledge and worker compliance ($p=0.303$). This means that even though workers have good knowledge of OHS, this does not always translate into compliant behavior in the field. This condition may be caused by a lack of awareness in internalizing knowledge into work practices.

The results of this study align with the findings of Maryam & Prokosawati (2022), who stated that OHS culture depends not only on knowledge levels but also on other factors such as company policies and employee motivation. This also aligns with research by Abbas (2019), which shows that OHS implementation is jointly influenced by individual factors, the environment, and supporting facilities, not just knowledge alone.

The Relationship between Supervision and Compliance

Supervision was shown to be significantly associated with worker compliance ($p=0.001$). Workers who received good supervision were more compliant with implementing OHS culture (72.9%) compared to workers who received poor supervision (34.7%). This finding indicates that the presence of supervisors or safety officers plays a crucial role in ensuring worker compliance with OHS regulations.

These results align with research by Rahman, Thamrin, & Batara (2021) at PT. Energi Sengkang, which found that leadership and supervision are key determinants in establishing an OHS culture. Research by Sudarni (2020) also emphasized that leadership and supervision are important indicators in improving safety culture in steel companies. Therefore, consistent supervision can strengthen safe behavior and prevent OHS violations.

Relationship between work experience and compliance

Work experience is not significantly related to worker compliance ($p=0.592$). This suggests that length of service does not always correlate with adherence to OHS culture. Long-time employees may rely on habit, while new employees may be more cautious as they are still adapting.

This finding differs from Suma'mur's (2009) theory, which states that work experience can be a protective factor against workplace accidents because workers are more familiar

with the risks. However, this study supports Putra & Pagehgiri's (2019) findings in the Greenhill Jimbaran Hotel project, which showed that OHS implementation is influenced by environmental and supervisory factors, not solely individual experience.

Research Implications Overall, the results of this study confirm that the implementation of an OHS culture in the Palu City Bridge IV construction project by PT Waskita Karya (Persero) Tbk relies heavily on active company oversight. Knowledge and work experience alone are insufficient to ensure compliance without continuous monitoring. Therefore, the company needs to increase the number of safety officers, strengthen field oversight, and integrate OHS policies into its daily work culture.

CONCLUSION

This study analyzes factors related to worker compliance in implementing OHS culture in the construction project area of Bridge IV Palu City PT Waskita Karya (Persero) Tbk. From the analysis results it can be concluded that Knowledge is not significantly related to worker compliance in implementing OHS culture ($p = 0.303$). Work experience is not significantly related to worker compliance in implementing OHS culture ($p = 0.592$). Supervision has a significant relationship with worker compliance ($p = 0.001$), so it is the most dominant factor influencing the implementation of OHS culture in construction projects. Thus, it can be concluded that worker compliance with the implementation of an OHS culture is more influenced by external factors such as supervision than internal factors such as knowledge and work experience. Companies need to strengthen oversight mechanisms, including adding safety officers in the field, to increase the effectiveness of OHS culture implementation and minimize the risk of workplace accidents.

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