

ANALYSIS OF THE APPLICATION OF OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT SYSTEM (K3) IN THE CONSTRUCTION PROJECT OF THE OFFICE BUILDING OF THE DPRD BUILDING PHASE 1 OF THE PROVINCE OF SOUTH KALIMANTAN BANJARBARU

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ABSTRACT

Construction is the process of building facilities and infrastructure in civil engineering and architecture. Construction projects have unique characteristics. The main factor is the location of the workplace, which is exposed to all weather conditions and has limited working hours. Thus, the construction services sector is at high risk of experiencing significant accident costs. A healthy and safe work environment is obtained from the implementation of a well-done Work Health and Safety Management System (SMK3). The purpose of the study was to determine the implementation of SMK3 at the South Kalimantan Provincial Parliament Office Building site and the constraints of SMK3 implementation.

Data collection involved interviews and questionnaires to respondents related to OHS to obtain primary data, as well as secondary data from references from books, journals and previous research. The data was then analyzed using product moment correlation testing validity and Cronbach's Alpha method testing reliability and calculating the average value (mean). The variables of the study were the Work Health and Safety Management System (X1) and the Obstacles to the Implementation of SMK3 (X2).

The results of the analysis of the implementation of the Work Health and Safety Management System (SMK3) carried out at the location of the South Kalimantan Provincial DPRD Office Building in Banjarbaru show that the project has implemented various OSH programs while the most significant obstacle in the implementation of work safety and health is related to the tendency of workers who work without using PPE.

Keywords: Occupational Health and Safety (OHS), OHS implementation, OHS Implementation Constraints.

1. INTRODUCTION

Occupational Health and Safety (OHS) is a program developed as a process to prevent or reduce the risks that can cause accidents at project sites. According to ISO 45001:2018, Occupational Safety and Health (OHS) is a systematic approach to addressing health and safety risks and opportunities at project sites in order to create a healthy and safe work atmosphere, as well as prevent accidents and occupational diseases,

and increase productivity. The object of this research is the South Kalimantan DPRD Building Construction Project located in the Banjarbaru South Kalimantan Provincial Government Office Environment. In this phase 1, the construction work will be carried out for 217 calendar days starting from May 29, 2024 with a project value of Rp.48,785,726,736. According to Government Regulation No.36 Year 2005 on Buildings relating to height, this project is a low-rise building with a maximum height of three floors. However, the building has a complex structure, including a basement and elevator.

Thus, a study to assess the effectiveness of SMK3 implementation in the project to minimize or at least limit work-related accidents. Properly managed SMK3 implementation will create a safe and productive working atmosphere and is essential in increasing worker productivity.

2. LITERATURE REVIEW

Occupational Safety and Health Management System

Occupational Safety and Health Management System (SMK3) is a management that unites K3 regulations, both from the organizational structure, plans, responsibilities, work methods, procedures, and processes as well as resources to form a work environment that is controlled, efficient and productive (Peraturan Menteri Pekerjaan Umum dan Perumahan Rakyat, 2008).

Work Accident

Work accidents refer to incidents related to the employment relationship. In this case, the employment relationship is defined as an accident caused by work factors or while performing work duties (Suma'mur, 1989).

Consequences of Work Accidents

Every work accident results in losses for workers, management, and the country itself. These accidents cause losses to all those involved in the accident (Napitupulu, 1989).

Functions and Objectives of Occupational Safety and Health Management System

The purpose of SMK3 is to minimize and prevent accidents that cause injury to oneself and property (Ramli, 2010).

Requirements for OHS Implementation in Construction Projects

OHS management is the control of a company or organization. Based on legislation, Article 86 No.13 of 2003, employers are required to take measures to ensure OHS at the work site. These regulations include rules for entering the project site, morning safety meetings, OHS inspections, safety patrols, compliance with applicable and non-applicable signs, use of personal safety equipment, and others.

Occupational Safety and Health (OHS) Management System Implementation Standards

1. The standards for the implementation of OHS in construction projects in Indonesia are based on the following OHS-related laws and regulations:
2. Law Number 1 of 1970 concerning Occupational Safety
3. Law Number 13 of 2003 concerning Labor
4. Regulation of the Minister of Manpower No. 4 of 1987 concerning the Occupational Safety and Health Supervisory Committee (P2K3)
5. Government Regulation Number 50 of 2012 concerning the Implementation of the Occupational Safety and Health Management System.

Obstacles to the Implementation of Occupational Safety and Health Management System (OHS)

There are various obstacles in implementing SMK3, including legal and regulatory compliance factors, commitment factors, human resources and work location factors, cost factors, and government support factors (Kurnia, 2020).

SPSS Computer Program

Statistical Product and Service Solution (SPSS) is part of the data analysis process, which makes it possible to access and process data. Validity and reliability testing can be done using the SPSS application. This application measures the ability of the survey to collect data related to the questions asked. Reliability testing is used to assess the reliability and consistency of the data. SPSS allows testing large amounts of data effectively for normality and reliability tests. (Janna & Herianto, 2021).

3. METHODS

The research location was on Jalan Bina Praja Utara, Palam, Kec. Cempaka, Banjarbaru, South Kalimantan 70731 (Banjarbaru South Kalimantan Provincial

Government Office Area). Primary research was conducted through observation, recording of data obtained, distributing questionnaires and interviews to obtain information on the implementation and constraints of OHS at the research site. In addition, there are secondary data such as information obtained from project actors or contractor companies, data that has a relationship with the Occupational Health and Safety Management System (SMK3), as well as literature references from books and journals relevant to the object of research.

4. RESULTS AND DISCUSSION

Overview of the Study Object

This research is the South Kalimantan DPRD Building Construction Project located in the Banjarbaru South Kalimantan Provincial Government Office area is a project owned by the South Kalimantan Provincial Government, the Public Works and Spatial Planning Office (PUPR) as the budget in charge and appoints PT Wiratama Graha Raharja as the Implementing Contractor while the project is located in the Banjarbaru area. The planner was PT Asta kencana Arsimetama and the supervision was carried out by PT Sigma Rekatama Consulindo. In phase 1, this construction was carried out within a period of 217 calendar days from May 29, 2024 with a project value of Rp48,785,726,736. This research was taken from the distribution of questionnaires previously distributed to the project workforce. Furthermore, the results obtained from the questionnaire were analyzed using the SPSS program, and this analysis provides information about the application of the OHS management system as applied in the field, as well as the main obstacles in implementing SMK3 and how to overcome them. In this study, 12 respondents were taken.

Implementation of Occupational Safety and Health Management System

The following Table 1 shows the results of the OHS implementation questionnaire used in calculations using SPSS 26 software.

Table 1 Data from the Questionnaire on the Application of OHS

Respondents	Question																		Total
	Occupational Safety										Occupational Health								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1	5	4	5	4	5	5	4	4	5	5	4	5	4	4	4	5	5	4	81
2	4	4	5	5	4	5	4	4	5	5	4	5	4	5	5	5	5	4	82

Respondents	Question																		Total
	Occupational Safety										Occupational Health								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
3	4	5	4	4	5	4	4	4	5	4	4	5	4	5	4	5	4	4	78
4	5	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	89
5	4	4	3	3	4	3	4	5	2	3	4	4	4	5	4	2	4	4	66
6	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	90
7	4	4	4	4	4	5	4	4	5	5	4	5	5	5	5	5	4	5	81
8	5	5	5	5	4	5	5	4	5	5	5	5	4	5	4	5	5	4	85
9	4	4	4	4	5	5	4	4	4	5	4	5	3	5	4	4	4	3	75
10	5	5	4	4	4	4	4	4	5	4	4	5	4	5	4	5	5	4	79
11	5	5	5	5	5	5	4	4	5	5	4	5	5	5	5	5	5	5	87
12		4	5	5	4	5	5	4	5	5	5	5	5	5	5	5	4	5	86
Total																			979

Validity Test

The validity check is carried out with the product moment correlation formula, r count obtained from the output results and compared with the value in the r table. Determination of the r table value of N 12 with a significance level of 5% (95% confidence level or alpha of 0.05). The following output of the validity test can be seen:

Table 2 Recapitulation of Validity Test

OHS Implementation	Variables	r Count	r Table	Ket
PPE is provided to prevent the risk of accidents while working in accordance with standard procedures.	X.1	0.645	0.576	Valid
Safety and warning signs are installed in the work environment.	X.3	0.905	0.576	Valid
Inspection of tools in good condition and regular maintenance.	X.4	0.910	0.576	Valid
Under certain conditions the project site is well-lit	X.6	0.827	0.576	Valid
Provide fire extinguishers.	X.7	0.637	0.576	Valid
Always carry out intensive supervision of the implementation of work, as well as conduct briefings to workers on procedures work safety during the project	X.9	0.839	0.576	Valid
Provided guarantee insurance safety for every worker.	X.10	0.827	0.576	Valid
The company has provided health insurance to every worker.	X.11	0.637	0.576	Valid
Provide a first aid kit for workers' first aid.	X.12	0.759	0.576	Valid

OHS Implementation	Variables	r Count	r Table	Ket
Provide education or training about the importance of health in completing work	X.13	0.662	0.576	Valid
Provide medicines for workers if needed	X.15	0.689	0.576	Valid
The company has provided space for rest and comfortable bathrooms/toilets for workers.	X.16	0.839	0.576	Valid
The company always gives permission easily to workers who are sick	X.18	0.662	0.576	Valid

Based on the results of validity testing using SPSS 26 software, it was found that only 13 variables were valid.

Reliability Test

Reliability is measured using statistical testing, namely Cronbach's Alpha. The variable will be reliable if the Cronbach's Alpha value exceeds 0.6, as in Table 3 below:

Table 3 Ouput Reliability Test of K3 Implementation with SPSS 26

Reliability Statistics	
Cronbach's Alpha	N of Items
.934	13

It can be seen from the reliability test results above, all variable coefficients exceed 0.60, it is concluded that the items of the questionnaire questions are reliable.

Data Analysis

The following is a recapitulation of the K3 application factor with the mean calculation method using SPSS 26 software.

Table 4 Recapitulation of OHS Implementation Factors

NO	Indicator	Mean	Likert Scale	Description
1	Provision of safety equipment	4.46	4 (Agree)	Implemented
2	Completeness of safety equipment	4.58	4 (Agree)	Implemented
3	Education and training on work safety	4.67	4 (Agree)	Implemented
4	Understanding the correct use of safety equipment	4.42	4 (Agree)	Implemented
5	Job safety assurance	4.67	4 (Agree)	Implemented
6	Health insurance provided by the company	4.33	4 (Agree)	Implemented

NO	Indicator	Mean	Likert Scale	Description
7	Work facilities that support the health of workers	4.67	4 (Agree)	Implemented
8	Provision of labor health equipment	4.71	4 (Agree)	Implemented
9	Occupational health-related education and training	4.33	4 (Agree)	Implemented

Obstacles to Implementation of Occupational Safety and Health Management System

The following Table 5 presents the data from the questionnaire results on constraints to the application of OHS which are used in calculations using SPSS 26 software.

Table 5 Questionnaire Results Data on Obstacles to OHS Implementation

Respondents	Question								Total
	1	2	3	4	5	6	7	8	
1	5	5	4	5	5	4	3	3	34
2	4	4	5	3	3	3	3	3	28
3	4	4	4	4	4	4	4	4	32
4	5	5	4	5	5	5	4	1	34
5	4	4	4	3	4	4	2	2	27
6	5	4	5	5	5	5	5	5	39
7	4	5	5	4	4	4	4	5	35
8	4	5	4	5	4	4	4	4	34
9	5	4	3	4	3	3	3	4	29
10	5	4	4	4	5	4	4	4	34
11	5	5	5	4	4	4	4	5	36
12	5	5	4	5	3	4	4	4	34

Validity Test

Checking the validity using product moment correlation, the calculated r value is obtained based on the output results and compared against the r table value. Determination of the r table value for N 12 with a significance level of 5% (95% confidence level or alpha of 0.05). The output of the validity test can be seen:

Table 6 Recapitulation of Validity Test of OHS Implementation Constraints

Indicator	Variables	r Count	r Table	Ket
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Workers are used to working without PPE or feel uncomfortable when using PPE.	P1	0.577	0.576	Valid
Limited OHS funds.	P2	0.825	0.576	Valid
company does not provide training to workers on the implementation of OHS.	P3	0.851	0.576	Valid
Lack of knowledge and awareness of the importance of work safety in the field	P4	0.916	0.576	Valid
The company does not carry out regular inspections and supervision in the application of OHS to hazardous conditions and work methods in the work environment.	P5	0.737	0.576	Valid
There are no strict sanctions for OHS violations.	P6	0.659	0.576	Valid
Unavailability of rest rooms and first aid kits as well as cleanliness at the project site	P7	0.637	0.576	Valid
Contractors forced to work late into the night	P8	0.653	0.576	Valid

Reliability Test

Reliability is measured by statistical testing, namely Cronbach's Alpha. The variable will be reliable because the Cronbach's Alpha value exceeds is 0.6 as shown Table 7 below:

Table 7 Ouput Reliability Test of K3 Implementation with SPSS 26

Reliability Statistics	
Cronbach's Alpha	N of Items
0.898	8

Berdasarkan hasil uji reliabilitas di atas, menunjukkan koefisian variabel melebihi 0,60. Oleh karena itu, maka item-item pertanyaan dalam kuesioner tersebut reliabel.

Analisis Data

Berikut ialah Rekapitulasi faktor kendala penerapan K3 dengan metode perhitungan mean menggunakan software SPSS 26.

Tabel 1 Rekapitulasi Faktor Kendala Penerapan K3

NO	Questionnaire Questions	Average	SD	Rank
1	Workers are used to working without PPE or feel uncomfortable when using PPE.	4.67	0.651	1
2	Limited OHS funds.	4.50	0.522	3
3	The company does not conduct training for workers on the implementation of OHS.	4.33	0.778	4

NO	Questionnaire Questions	Average	SD	Rank
4	Lack of knowledge and awareness of the importance of work safety in the field	4.33	0.651	5
5	The company does not carry out regular inspections and supervision in the application of OHS to hazardous conditions and work methods in the work environment.	4.50	0.674	2
6	There are no strict sanctions for OHS violations.	4.00	0.603	7
7	Unavailability of rest rooms and first aid kits as well as cleanliness at the project site	3.75	0.754	8
8	Contractors forced to work late into the night	4.17	0.718	6

5. CONCLUSIONS

The results of analysis with SPSS 26 software and mean data analysis show that the DPRD Office Building construction project has implemented the application of Occupational Safety and Health (OHS), and the obstacle is due to the lack of awareness of the importance of work safety. Therefore, to increase the success rate of the OHS program, companies need to implement effective OHS management and communicate directly with employees to increase their awareness of the importance of safety in the workplace.

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