

ANALYSIS OF FACTORS INHIBITING THE APPLICATION OF SMK 3 IN THE COTTON BRIDGE WIDENING PROJECT- GLENDENG BOJONEGORO DISTRICT

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Abstract

In construction projects, inadequate implementation of the Occupational Safety and Health Management System (OHSMS) poses risks to the safety and well-being of workers, resulting in decreased performance and compromised project quality. This study focuses on the Kapas-Glendeng bridge widening project in Bojonegoro Regency, identifying key obstacles such as workforce competence, limited experience, insufficient training, and challenges accessing digital information. Additionally, issues related to worker involvement in regulation-making, understanding of Personal Protective Equipment (PPE), reporting procedures, and documentation of work accidents were observed. To address these challenges, the study recommends strategies such as involving untrained workers in competence-building programs, providing apprenticeships for less experienced personnel, implementing comprehensive training information systems, actively engaging workers in project planning, enforcing OHS monitoring systems, ensuring mandatory PPE usage with penalties for violations, and establishing clear procedures for recording and reporting work accidents. This proactive approach aims to enhance OHS implementation and mitigate risks in construction projects.

Keywords: Factor, Healthy, Safety, Work, Construction

1. INTRODUCTION

The biggest contributor to the number of work accidents in Indonesia is the construction sector. In fact, it is not only in Indonesia. Worldwide, the International Labor Organization (ILO) reports as many as 60,000 fatal accidents occur in the construction sector each year. This is because construction work is almost always in an open place that is influenced by the weather, and has easy access to different people, so there is the potential for work accidents to occur (Hinze, Pedersen, and Fredley 1998).

Construction projects themselves have high work accidents, which occupy the highest level with 30% higher than other accidents. Drajad, 2020 in Hinze, Ihsan, and Lestari (2020). This is in line with data compiled by the Ministry of PUPR (2018) that construction accidents account for around 32% of the total number of accidents each year, and the number of work accidents increases almost every year. Meanwhile, data compiled from the Ministry of Manpower (Kemenaker) and BPJS Ketenagakerjaan annual data, in 2017 there were 123,040 cases, increasing again in 2018 by 173,415 cases and in 2019, it rose to 182,835 and in 2020, there were 221,740 cases and 2021, it rose again at 234,270 cases. This shows that the implementation of projects that have not fully implemented the Occupational Safety and Health Management System (SMK 3) in accordance with the correct rules.

To minimize the risk of work accidents, since the early 1980s the government has issued a regulation on work safety specifically for the construction sector, namely the Regulation of the Minister of Manpower and Transmigration No. Per-01/Men/1980. The regulation on work safety for construction was last updated through the Regulation of the Minister of Public Works and Public Housing No. 02/PRT/M/2018 concerning Amendments to the Regulation of the Minister of Public Works No. 05/PRT/M/2014 concerning Guidelines for Occupational Safety and Health Management Systems (SMK 3) Construction in the Field of Public Works. What is very unfortunate is the application of these regulations when construction development is carried out. The low level of public awareness of work safety issues and the low level of law enforcement by the government have resulted in the application of work safety regulations that are still far from optimal and ultimately lead to a high number of work accidents (Friyandary, Ihsan, and Lestari 2020).

According to Friyandary, Ihsan, and Lestari (2020) good project management will minimize the risk of project failure. In its development, project failure does not only include cost overruns and delays in completion time, but things such as work accidents are also factors that affect project success and labor productivity so that Occupational Safety and Health (OHS) management is needed in a construction project (Kurnia 2020).

Occupational Safety and Health is one of the most important factors in a job, for example the development of projects in the construction sector which is one of the supporting factors to advance a country, but in its implementation there are many inhibiting factors and work risks (Wynalda and Sulistio 2018). One of them is the application of the Occupational Safety and Health Management System (SMK 3) where the lack of application of this system will result in bad things such as the risk of work accidents which also impact on company losses by increasing costs due to minor and severe work accidents (Dharmayanti and Pramana 2018).

Government Regulation No. 50 of 2012 is a guideline for every company, especially companies in the field of construction work to implement the Occupational Safety and Health Management System (SMK 3), aiming to be able to develop and be able to control the risk of hazards in order to create a safe, efficient, effective and productive work environment. But in reality, there are many companies that still experience accidents in a fairly high work environment, due to the low implementation of the Occupational Safety and Health Management System (SMK 3) (Atmaja et al. 2018). Influencing factors such as lack of knowledge, low supervision and lack of K3 culture from companies, especially companies in the field of construction work in implementing Occupational Safety and Health (K3), so the government is moving quickly to make improvements and improvements in its application, by requiring every company to be able to implement Occupational Safety and Health (K3).

The Kapas - Glendeng Bridge widening project in Bojonegoro Regency is one of the construction projects that has a high risk of work accidents. One of the causes is the use of heavy equipment and sophisticated machines that require expertise in using them properly. However, based on observations at the project site, the application of the occupational safety and health management system is still not optimal, for example, there are still workers who do not wear personal protective equipment while doing their work.

Based on Law No.1 of 1970 concerning Occupational Safety, the implementation of the Occupational Safety and Health (K3) program is one form of effort to create a safe, healthy and prosperous work environment, free from work accidents and occupational diseases and free of environmental pollution towards increased productivity. Therefore, the occupational safety and health management system (SMK 3) is an inseparable part of the labor protection system and for construction service work, besides that it can prevent and minimize itself from the risk of moral or material loss, as well as human safety and the surrounding environment that is effective and efficient. Most companies object to the existence of SMK 3 because each company feels it has to pay additional costs. But this is not the case, the occupational safety and health management system (SMK 3) is a rare savings and increased productivity. With SMK 3, companies are not burdened with the cost of accidents or labor health because safety and health at work are guaranteed.

In the implementation of construction OHS, the level of knowledge, understanding and application of the parties involved for work safety prevention is very low (SINAGA 2021). This is an obstacle in construction work because there are still many paradigms that say that safety is very expensive and only wastes costs, as well as a mindset about the lack of work safety and statements of discomfort in using safety clothing (SINAGA 2021). This is also what often causes work accidents in construction work.

Based on the problem of implementing the work safety management system, research was conducted on the inhibiting factors in the application of SMK 3 in the Kapas - Glendeng bridge widening project in Bojonegoro Regency so as to prevent and minimize work accidents (Prakoso, Prawenti, and Susilowati 2023).

2. RESEARCH METHODS

This research is a quantitative descriptive research. The research began with the preparation stage, which is the stage of activity before starting data collection and processing. This stage includes observation, literature study, formulating problems, formulating objectives, and determining data needs. This research took place in the Kapas Bridge Widening project - Glendeng Bojonegoro Regency which is located in Kalirejo Village, Kapas District, Bojonegoro Regency, East Java.

In this study 2 types of data were used, namely primary data and secondary data. Primary data collection is done by means of observation or direct observation in the field in order to know directly the actual conditions carried out by means of observation. This observation is done by observing the object and taking the necessary data. Adapaun the way that is done in order to get the data is by directly seeing the activities of the workers at the Kapas - Glendeng bridge widening project location in Bojonegoro Regency.

Secondary data collection from important sources related to primary data as input data and complementary data. The secondary data required are RAB regarding K3 in the Kapas Bridge Widening project - Glendeng Bojonegoro Regency, work accident data on the project, Government Regulation Number 50 of 2012 concerning Occupational Safety and Health Management Systems. Data Analysis Methods using Descriptive Analysis, and descriptive statistics.

3. RESULTS AND DISCUSSION

3.1. Analysis Result

Based on the analysis, it is known that the workforce in the Kapas - Glendeng bridge widening project are all men as many as 30 people with a percentage of 100% and there are no female workers. The number of workers with ages ≤ 25 years is 2 people with a percentage of 7%, workers with an age range of 26 - 30 years are 2 people with a percentage of 7%, workers with an age range between 31 - 35 years are 10 people with a percentage of 33%, and workers with ages above 36 years are 16 people with a percentage of 53%. The largest number of workers with age groups > 36 years with a percentage of 53%, while the least number of workers in the age group ≤ 25 years and age between 26 - 30 years as many as 2 workers with a percentage of 7%.

Workers with the last level of education elementary school as many as 9 people with a percentage of 30%, workers with the last level of education junior high school as many as 6 people with a percentage of 20%, workers with the last level of education high school / vocational high school as many as 11 people with a percentage of 37%, and workers with the last level of education college as many as 4 people with a percentage of 13%. Thus it can be seen that the highest level of education of the workforce is elementary school as many as 9 people with a percentage of 30%, while the lowest level of education of the workforce is college, namely 4 people with a percentage of 13%.

The number of workers with work experience < 3 years is 3 people with a percentage of 10%, the number of workers with work experience between 3 - 5 years is 11 people with a percentage of 37%, the number of workers with work experience between 6 - 10 years is 11 people, and workers with work experience of more than 10 years is 5 people. So it can be seen that the number of workers with the most work experience is between 3 - 5 years and between 6 - 10 years, with a total workforce of 11 people and a percentage of 37%.

Table 1. Summary Description of Occupational Safety and Health Management System Implementation

Variable	Subvariable	Element	Σ (%)	Criteria
Occupational Safety and Health Management System	Implementation of the OHS Plan	Human resources procurement	73%	Good (76%-100) Fair (51%-75%) Poor (26%-50%) Not Good (0%-25%)
		Consultation, motivation and awareness	88%	
		Responsibility and Liability	90%	
		Job Training and Competency	83%	
		Provision of adequate Infrastructure and Facilities	83%	
Average Percentage			81%	Good

Source: Researcher Processed Data 2023

In detail, the description of the research results of each element and indicator is described as follows:

- 1) In the human resources element in general, if the average of the five indicators is calculated, the percentage of the application of the occupational safety and health management system in the Kapas Bridge Widening project - Glendeng Bojonegoro Regency is 73%.
- 2) The suitability of the application of the occupational safety and health management system in the elements of consultation, motivation and awareness in the Kapas Bridge Widening project - Glendeng Bojonegoro Regency on average amounted to 88%.
- 3) On the elements of responsibility and accountability, the application of the occupational safety and health system in the Kapas Bridge Widening project - Glendeng Bojonegoro Regency as a whole with a percentage of conformity of 90%.
- 4) In the training and work competency element, in the indicator of determining the training program that must be carried out with a percentage of the application of the occupational safety and health management system of 83%. This is because 10 workers have never attended training but these workers are able to complete work with quantity and quality according to the SOP.
- 5) The average application of the occupational safety and health management system in the Kapas Bridge Widening project - Glendeng, Bojonegoro Regency, in the element of providing adequate infrastructure and facilities, the percentage of conformity is 83%.
- 6) In general, the application of the occupational safety and health management system in the Kapas - Glendeng bridge widening project in Bojonegoro Regency obtained a percentage value of 81%, which is in the good category.

3.2. Discussion of inhibiting factors in the implementation of the Occupational Safety and Health Management System in the Kapas - Glendeng Bridge Widening Project, Bojonegoro Regency

The occupational safety and health management system in the Kapas-Glendeng bridge widening project in Bojonegoro Regency, although its implementation is in the good category, there are still several indicators that cannot be applied optimally. This is because there are factors that hinder the implementation of the occupational safety and health management system. these inhibiting factors include:

1. There are still workers who do not have a manual material handling competency certificate. This is because workers who do not have manual material handling knowledge have never attended training and have less than 5 years of work experience.
2. Communication of OHS information is still not effective because there are workers who can only access information verbally and manually through the installation of OHS posters installed at the project site. However, they have not been able to access information through digital media (internet).

3. Labor involvement in making regulations is an inhibiting factor in the implementation of the occupational safety and health management system. this is because the workforce is indifferent to existing regulations.
4. Workers still do not understand and apply occupational safety and health when working, for example the use of incomplete PPE such as there are workers who do not wear safety gloves. Providing an understanding to the workforce about the dangers that might injure and injure at work has been carried out continuously by K3 administrators in the Kapas - Glendeng bridge widening project, Bojonegoro Regency, but there are still workers who are not disciplined in wearing complete PPE according to the risk of their work.
5. Documenting work accidents that occur is the responsibility of officers in the K3 field. Weak documentation
6. An accountability system must be established in achieving goals and objectives in accordance with the functions and management levels of the company concerned to ensure that the plan can be implemented. OHS improvement will be effective if all parties in the company are encouraged to participate in the implementation and development of the OHS management system, and have a corporate culture that supports and contributes to the OHS management system. Ensuring safety in the workplace has important components according to Suma'mur (1985: 311), namely the responsibility of company/agency leaders, delegation of authority to supervisory staff, status and activities of safety committees, the role of safety experts, and others.
7. Training and work competence are closely related to the implementation of the occupational safety and health management system in the project. This can be seen when there are personnel who have never attended training so that they do not have competency certification from authorized institutions, which has a huge impact on performance on the project.
8. In the indicator of determining the training program that must be carried out, mapping and analysis must be carried out based on data on workers who need training. So that the training that will be carried out can affect the implementation of the occupational safety and health management system in the project.
9. The budget allocation for the implementation of K3 as a whole is an obstacle in the implementation of the occupational safety and health management system in the Kapas - Glendeng bridge widening project, Bojonegoro Regency because the implementation of SMK 3 is not only fixated on the procurement of PPE, but whether the workforce is able to use PPE properly and correctly according to their work. In this case, the budget allocation for K3 is already available, but there are workers who do not use the PPE that has been provided.
10. The company has provided work procedures for each type of work that has been made through an OHS-oriented job analysis (Job Safety Analysis) by competent personnel, but in its implementation it has not been implemented in accordance with the SOP. For example, workers who do not wear complete PPE even though every job has hazards.

3.3. Efforts Made to Overcome Obstacles in the Implementation of the Occupational Safety and Health Management System on the Kapas-Glendeng Bridge Widening Project, Bojonegoro Regency

Based on the results of the analysis of the application of the Occupational Safety and Health Management System in the Kapas-Glendeng Bridge Widening Project, Bojonegoro Regency, which is still at a percentage of 86%, shows that it has not reached its maximum. This is due to several obstacles that have been described previously. Furthermore, these obstacles will be analyzed so that efforts can be made in overcoming obstacles in the application of the K3 management system. The results of the analysis can be described as follows:

- 1) Including workers who have never attended training and do not have a certificate of competence. This is an effort to improve the competence of the workforce so that the competence can be recognized by the authorized institution to issue competency certificates according to their field of work.
- 2) Workers who are less competent and have less than 5 years of work experience are included in internships in construction projects to deepen their knowledge and skills in the construction field.
- 3) In an effort to improve effective information communication, it can be done by conducting information system training both manually and digitally, so that all workers are able to access information effectively both manually and digitally.
- 4) Actively involving workers in the preparation of work design is one of the efforts in actively involving workers.
- 5) Making a written policy on OHS, making written objectives and programs on OHS.
- 6) Conducting a supervision system for the implementation of OHS in the project and requiring all workers to wear PPE and providing punishments to workers who violate the rules.
- 7) Make procedures for recording data and reporting on work accidents, and conduct evaluations on the implementation of OHS so that the implementation of OHS will continue to improve, and the requirements for implementing the OHS management system can be documented.
- 8) Provide guidance to OHS officers in recording and reporting on work accidents and documentation procedures. Documentation of the OHS management system is expected to develop even better and there are efforts to improve the OHS management system in the Kapas - Glendeng bridge widening project in Bojonegoro Regency.

4. CONCLUSION

Based on the data analysis and discussion in the previous chapter 4, the following conclusions can be drawn:

1. The inhibiting factors in the implementation of the occupational safety and health management system in the Kapas-Glendeng bridge widening project in Bojonegoro Regency are (1) low labor competence, (2) minimal work experience in the construction field, (3) low participation of workers in job training in the construction field, (4) the ability to access information through digital media that

has not been owned by all workers, (5) the low involvement of workers in making regulations, (6) lack of understanding and awareness for workers in wearing PPE, (7) procedures for reporting, recording data and documenting work accidents that have not been well coordinated.

2. The most dominant inhibiting factor in the implementation of the occupational safety and health management system in the Kapas-Glendeng bridge widening project in Bojonegoro Regency is the procedure for reporting, recording data and documenting work accidents.
3. Efforts that can be made to overcome the above obstacles are: (1) Include workers in training in the field of material handling and do not have a certificate of competence, (2) Workers who are less competent and have less than 5 years of work experience are included in internships in bridge construction projects, (3) Organize information system training both manual and digital, (4) Actively involve workers in the preparation of work design, (5) Conduct a supervision system for the implementation of OHS in the project and require all workers to wear PPE and provide punishments to workers who violate the rules, (6) Make procedures for recording data and reporting on work accidents, (7) Provide guidance to OHS officers in recording and reporting on work accidents and documentation procedures.

ADVICE

Based on the above conclusions, the authors try to provide suggestions that may be useful as possible solutions regarding the application of OHS in construction work:

1. Suggestions for Practitioners

- a. Occupational safety and health policy

The contractor must make an OHS policy which will be the basis for the success of OHS in construction project activities.

- b. Administration and procedures

Establish personnel and officers who handle OHS in the project. The contractor must have access to the person in charge of the project, sufficient personnel responsible for managing OHS activities in the company whose number is adjusted to the needs.

- c. Contractor Safety

The company should pay more attention to the knowledge of its employees regarding the Occupational Safety and Health Management System (K3), such as providing training on K3 periodically so that they can find out how to apply K3 properly and correctly.

2. Suggestions for Scientists/Academics

This research can be carried out further by analyzing the level of risk that occurs using additional data, namely accident rate and severity data.

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