

ANALYSIS OF FACTORS INHIBITING THE IMPLEMENTATION OF K3 IN CONSTRUCTION PROJECTS: Case Study of the Kapas-Glendeng 8 Bridge Project, Bojonegoro Regency

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Abstract: Low implementation of K3 in construction projects can cause the safety and health of construction workers to be given less attention, so that construction workers feel less safe and comfortable, which can result in a decrease in performance levels. The impact of non-optimal performance results in the project being carried out not being able to meet the quality requirements that have been set. Based on data analysis from observations on the Kapas-Glendeng 8 bridge widening construction project, Bojonegoro Regency, there are inhibiting factors in implementing the occupational health and safety management system, namely workforce competency, work experience in the construction sector, job training, ability to access information via digital media, worker involvement in making regulations, understanding and awareness in wearing PPE, reporting procedures, data recording and documentation

Keywords: Safety, Factors Inhibiting, Implementation Safety

INTRODUCTION

Government Regulation No. 50 of 2012 is a guideline for every company, especially in the construction work sector, to implement an Occupational Safety and Health Management System (SMK3), which aims to control dangerous risks to create a safe, efficient, effective, and productive work environment. However, many companies still experience quite high levels of accidents in the work environment, due to the low implementation of the Occupational Safety and Health Management System (SMK3). Influencing factors such as lack of knowledge, low supervision, and lack of K3 culture from companies, especially construction work companies, in implementing Occupational Safety and Health (K3), the government is moving quickly to make improvements and improvements in its implementation, by requiring every company to be able to implement Safety and Occupational Health (K3).

The highest contributor to the number of work accidents in Indonesia is the construction sector. In fact, it doesn't only happen in Indonesia. According to the International Labor Organization (ILO), 60,000 fatal accidents occur in the construction sector every year throughout the world. This is because construction service work is almost always in an open environment that is influenced by the weather and has easy access for different people to enter, so there is the potential for work accidents to occur (Hinze, 1997).

Based on observations in several construction projects, there are still workers who do not wear personal protective equipment (*safety gloves, helmet*) in doing his job. The Kapas-Glendeng 8 bridge widening project, Bojonegoro Regency, is a construction project that has a high risk of work accidents. This is due to the use of heavy equipment and sophisticated machines that require special skills. Based on the description above, research is needed. Regarding the analysis of factors that become obstacles in implementing occupational safety and health on the Kapas-Glendeng 8 bridge construction project, Bojonegoro Regency.

RESEARCH METHODS

The research method used was field observation and literature study regarding occupational safety and health management system guidelines in accordance with Government Regulation Number 50 of 2012. Observations were carried out by observing the activities of workers on the Kapas-Glendeng 8 bridge construction project, Bojonegoro Regency.

What is meant by table 1 of the assessment criteria is that if the project complies with the K3 implementation procedures, then the assessment score is 1 and if it is not appropriate, then an assessment score of 0 is given.

Table 1. Assessment criteria

No.	Application	Score
1	Inappropriate	0
2	In accordance	1

Source: Author's Process, 2023.

An example of assessing K3 implementation procedures using scoring is as follows:

$$\text{Rumus rata – rata (mean)} = \frac{\sum \text{Scoring}}{\text{Total Indicators}}$$

So that the average value of each inhibiting factor is obtained, and the ranking order is based on the average value obtained.

Table 2. Indicators for the Implementation of Occupational Safety and Health Based on PP Number 50 of 2012

Subvariabel	Elements	Indicator
Implementation of the K3 Plan	Procurement of human resources	Provide human resources according to needs and have work competence and authority in the field of K3 as proven through an K3 certificate issued by the authorized agency.
		Identify work competencies and organize training.
		Communicate K3 information effectively.
		Making rules to obtain the opinions and suggestions of experts.
		Making regulations for the implementation of active worker consultation and involvement
	Consultation, motivation, and awareness	K3 administrators must provide workers with an understanding of the dangers that might injure and injure them while working.
		The company designates, documents, and communicates responsibility and accountability in the field of K3
	Responsibility and accountability	The company appoints human resources who are authorized to act and explain to all levels of management, workers, contractors, subcontractors, and visitors.
		Provide quick and precise reactions to deviant conditions or other events
	Training and job competency	Determining the training program that must be carried out
		Work procedures are provided for each type of work and are made through job analysis with K3 insight (Job Safety Analysis) by competent personnel.
		Procedures for reporting related information must be established to ensure the implementation of SMK3
	Provision of adequate infrastructure and facilities	Providing a unit responsible for K3
		Allocate a budget for overall K3 implementation
		Work procedures are provided for each type of work and are made through job analysis with a K3 perspective (Job Safety Analysis) by competent personnel.
		Relevant information reporting procedures shall be established to ensure the implementation of SMK3.

RESULTS AND DISCUSSION**Table 3.** Description of the Implementation of Occupational Safety and Health

Subvariabel	Elements	Σ (%)	Criteria
Implementation of the K3 Plan	Procurement of human resources	73%	Good (76%-100) Fair (51%-75%) Less (26%-50%) Not Good (0%-25%)
	Consultation, motivation, and awareness	88%	
	Responsibility and accountability	90%	
	Training and job competency	83%	
	Provision of adequate infrastructure and facilities	83%	
Average percentage		81%	Good

Source: Results processed by researchers, 2023.

Based on the analysis of observation data, each element can be explained with each indicator as follows:

1. Human Resources

The human resources element is used to determine whether the appointment and person responsible for K3 in the Kapas-Glendeng Bridge Widening Project, Bojonegoro Regency, has been held by a competent person or a person trained in handling K3 in the Kapas-Glendeng 8 Bridge Widening Project, Bojonegoro Regency.

- a. Indicators of providing human resources according to needs and having work competency and authority in the field of K3 as proven through K3 certificates issued by authorized agencies obtained an implementation percentage of 82%. Because of the 30 workers at the Kapas-Glendeng 8 Bridge project site, Bojonegoro Regency, there are still 11 workers who do not have a competency certificate issued by the authorized institution.
- b. The indicator of identifying work competencies and providing training obtained a percentage of 67%. This is because of the 30 workers; 10 people have work experience of less than 5 years in the construction sector on the Kapas-Glendeng 8 Bridge, Bojonegoro Regency project.
- c. In the indicator of effectively communicating K3 information, the implementation percentage was 95% with the existing conditions at the Kapas-Glendeng 8 Bridge project site, Bojonegoro Regency, there were 23 workers able to access information from electronic media, in print or verbally, 7 workers were only able to access it via print media. or oral media.
- d. In the indicator for making regulations to obtain expert opinions and suggestions, the implementation percentage was 60%. Due to the existing conditions at the Kapas-Glendeng 8 Bridge project site, Bojonegoro Regency, there were 7 workers who were not involved in providing advice because they were unable to access electronic media, 5 workers had an indifferent nature.
- e. In the indicator of making regulations for the implementation of consultation and active involvement of workers, the implementation percentage was 60% with the existing conditions in the Kapas-Glendeng 8 Bridge, Bojonegoro Regency project, there were 7 workers who were not involved in providing advice because they were unable to access media electronically, 5 workers had indifferent nature.

- f. In terms of human resources elements in general, if the average of these five indicators is calculated, the percentage of implementation of the occupational safety and health management system in the Kapas-Glendeng 8 Bridge, Bojonegoro Regency project is 73%.

2. Consultation, motivation, and Awareness

The elements of consultation, motivation and awareness are used to find out how to provide consultation, motivation, and awareness to workers in implementing an occupational health safety management system when working on construction projects.

- a. The implementation of an occupational safety and health management system with the elements of consultation, motivation, and awareness with K3 management indicators must provide workers with an understanding of the dangers that might injure and injure them while working. The suitability of its implementation is 90%. This is supported by the existing conditions at the Kapas-Glendeng 8 Bridge, Bojonegoro Regency project, where 3 workers in the excavation section did not wear complete PPE (gloves).
- b. Implementation of the occupational safety and health management system in the elements of consultation, motivation, and awareness with the Company indicators of designating, documenting, and communicating responsibility and accountability in the field of K3, the conformity of implementation is 87%. This is because 5 workers had experienced accidents with a light level of risk, 2 workers wore Personal Protective Equipment (PPE) and 5 workers did not wear complete PPE.
- c. The suitability of the implementation of the occupational safety and health management system in the elements of consultation, motivation and awareness on the Kapas-Glendeng 8 Bridge, Bojonegoro Regency project is an average of 88%.

3. Responsibility and Liability

The elements of responsibility and accountability are used to identify the person responsible for K3 in the Kapas-Glendeng 8 widening Project, Bojonegoro Regency. This responsibility takes the form of determining, appointing, documenting, and communicating K3 to all workers, including contractors, laborers, and visitors, especially at the Kapas-Glendeng 8 Bridge project, Bojonegoro Regency.

- a. In the element of responsibility and accountability, with indicators the Company appoints human resources who are authorized to act and explain to all levels of management, workers, contractors, subcontractors, and visitors, obtaining an implementation percentage of 100%. Because the existing conditions in the Kapas-Glendeng 8 Bridge, Bojonegoro Regency project show that 30 workers can complete the volume and quality of work in accordance with the SOP.
- b. In the element of responsibility and accountability with indicators that provide quick and precise reactions to deviant conditions or other events, the percentage of conformity is 80%. Existing conditions at the Kapas-Glendeng 8 Bridge project, Bojonegoro Regency, out of 30 workers, there were 3 workers who did not wear complete PPE, 10 accidents occurred with a light risk level and there were 3 accidents that were not reported.
- c. In the element of responsibility and accountability, the implementation of the occupational safety and health system in the Kapas-Glendeng 8 Bridge, Bojonegoro Regency project has a compliance percentage of 90%.

4. Training and Job Competencies

The elements of responsibility and accountability are used to determine work competency regarding K3 in the Kapas-Glendeng Bridge Widening Project, Bojonegoro Regency. Training and work competency is carried out by identifying and documenting K3 work competency standards. The results of identifying work competencies are used as a basis for determining the training program that must be carried out, and become the basis for consideration in acceptance, selection, and performance assessment.

In the training and work competency elements, the indicator for determining the training program that must be carried out is that the percentage of implementation of the occupational health and safety management system is 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. Providing Adequate Infrastructure and Facilities

The element of providing adequate infrastructure and facilities is used to identify the responsible unit, budget allocation, work procedures and K3 reporting procedures. A description of the research results regarding the provision of adequate infrastructure and facilities is as follows

- a. In the element of providing adequate infrastructure and facilities with the indicator of providing a unit responsible for K3, the percentage of conformity in implementing the occupational health and safety management system is 100%. This is proven by the existence of health insurance and work accident insurance for all workers in the Kapas-Glendeng 8 Bridge, Bojonegoro Regency project.
- b. In the element of providing adequate infrastructure and facilities with the indicator of allocating a budget for the overall implementation of K3, the percentage of conformity in implementing the occupational safety and health management system is 87%. This is because there are 3 workers who do not wear complete PPE because they think they have less freedom to work if they wear gloves.
- c. In the element of providing adequate infrastructure and facilities with work procedure indicators provided for each type of work and made through job analysis with an K3 perspective (Job Safety Analysis) by competent personnel, the percentage of conformity in implementing the occupational safety and health management system is 93%. This can be seen in the existing conditions, there are 3 workers not wearing complete PPE which could endanger themselves.
- d. In the element of providing adequate infrastructure and facilities with related information reporting procedure indicators that must be established to guarantee the implementation of SMK3, the percentage of conformity in implementing the occupational safety and health management system is 50%. This is supported by the conditions at the Kapas-Glendeng 8 Bridge, Bojonegoro Regency project location. Documentation in the form of K3 posters and K3 banners is installed at the project location but there are no procedures regarding approval, issuance, storage, and destruction of unused documents.
- e. From table 1 the average implementation of occupational safety and health in the Kapas-Glendeng 8 Bridge, Bojonegoro Regency project, in the element of providing adequate infrastructure and facilities, the percentage of compliance is 83%.

CONCLUSION

Based on the results of the analysis and discussion of the data processing that has been carried out, conclusions can be drawn from the problems studied as follows:

1. The inhibiting factors in implementing occupational safety and health on the Kapas-Glendeng 8 bridge project, Bojonegoro Regency are (1) low workforce competency, (2) minimal work experience in the field of bridge construction, (3) workforce participation in job training in the construction sector which is still low, (4) the ability to access information via digital media which is not yet owned by all workers, (5) low involvement of workers in making regulations, (6) lack of understanding and awareness for workers in using PPE, (7) procedures for reporting, recording data and documenting work accidents that have not been well coordinated.
2. The most dominant inhibiting factor in implementing occupational safety and health on the Kapas-Glendeng 8 bridge project, Bojonegoro Regency is the reporting procedures, data recording and documentation of work accidents on the project.

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