

Application of Occupational Safety and Health (K3) on The Project ASANKA Building Yogyakarta Development

Joseph Jaga Nuhan*, Dewi Sulistyorini, Angga Darmawan

Civil Engineering, Faculty of Engineering, Sarjanawiyata Tamansiswa University, Yogyakarta

**Corresponding author: jamesnuhan97@gmail.com*

ABSTRACT

Yogyakarta is a unique city, it is very possible to continue to build centers and infrastructure along with office buildings, shopping centers, accommodation and apartments. OSH software in production initiatives plays an important position in maintaining, protecting and fostering a safe, healthy and accident-free environment. During the implementation of the OHS program, some stakeholders still need to provide guidance to construction workers, but apart from that, the level of knowledge and understanding of workers is still very low, which can cause problems. can cause obstacles in the implementation of the excise program. This study aims to identify the implementation of the K3 program and the obstacles in implementing this program in the Yogyakarta Asanka building project. This research was conducted by distributing questionnaires to the Yogyakarta Asanka Building Construction Project. With the results of distributing questionnaires on the project with the number of respondents as many as 32 people with their respective roles/tasks in construction projects. Data analysis was carried out in Microsoft Excel, then the data was processed using a tool to determine the average distribution of the questionnaire and the standard deviation to measure deviations from the average size. the same sample of results with different deviations, measurement deviations to show the difference between high and low in the data obtained. Based on the results of the analysis it is known that the average value of the K3 program obtained is 4.586. This assessment concludes that it is important to protect the community by installing OHS signs inside and outside the project as well as signs indicating the presence of heavy vehicle paths to alert them at all times. workers about the importance of safety in the workplace and appealed to the public to always be careful around ongoing construction projects. For the constraints on OSH adoption, the mean obtained is 4.423, this assessment concludes that the constraints on OSH adoption are on the part of the workers, which is caused by the workers' lack of knowledge about K3 and the requirements of workers who are still in basic needs because personal safety is not a priority.

Keywords: occupational safety and health, K3, K3 program, obstacles to implementing K3

1. INTRODUCTION

Currently the ongoing construction of the Construction industry requires the health and safety of workers, which is important to protect workers from the risk of accidents. The construction industry with its projects is very prone to accidents at work. Today, things like safety are often underestimated as a waste of time and money. Construction of high- rise buildings is an activity that focuses on activities with a high level of risk. Construction work is a job that involves an engineering consultant as a planner, in facing free competition in the market, careful steps are needed that construction service companies, both private and public in Indonesia, must prepare, carry out various types of improvements to improve quality management, create a commercial system for construction services, business establishments, and ideals.

2. METHODS

Literature Review

Leyn Research [1]. Research conducted by Leyn [1] on “Evaluation of the Application of Occupational Safety and Health (K3) (Case Study at PT Indokon Raya). The objectives of the study were: 1) To find out how the implementation of Occupational Safety and Health (K3) on construction projects at PT. Indokon Raya and 2) To determine the performance level of Occupational Health and Safety on construction projects at PT. Indokon Raya and its comparison with Occupational Health and Safety Management standards (Ministry of Manpower and Transmigration Regulation No. Per.01/Men/1980). The object of research conducted by Leyn [1] Application of Occupational Safety and Health (K3L) at PT. Indokon Raya as well as comparing the performance levels of occupational safety and health (Regulation of the Minister of Manpower and Transmigration No. Per.01/men/1980). The data analysis technique used the results of PT. Indokon Raya and OHS Management System Operation procedures to determine the implementation of the OHS Management System in evaluating the implementation of OHS standards by PT. Indokon Raya. In the construction project of the Suramadu Side Madura Rest Area Building, a comparison system will be used between project data and the regulation of the Minister of Manpower and Transmigration No. Per.01/men/1980. The primary data in this study consisted of: Application/Implementation In the form of the application and implementation of K3 in the company. K3 supervision carried out by K3 supervisors in the form of monitoring or controlling the already implemented SMK3. Use of PPE Use of Personal Protective Equipment at PT. Indokon Raya. Do they already exist and if they do, do these security devices meet the applicable standards in Indonesia, namely SNI (Indonesian National Standard). The Ultimate Research, Santoso and Ninghardjanti [2] Research conducted by Pamungkas et al [2] on “Implementation of Occupational Safety and Health for Employees of the Production Division of PT. Iskandar Indah Printing Textile Surakarta”. The purpose of this study was to determine the implementation of Occupational Safety and Health of Employees of the Production Section of PT. Iskandar Indah Printing Surakarta Textiles. The research method used in this study is qualitative, the approach used is descriptive. The sampling technique used is purposive sampling. Data collection techniques used by researchers in this study include: interviews, direct observation, and documentation. The results showed that the implementation of occupational safety and health in the production division of PT. Iskandar Indah Printing Textile starts from the standard of existence, rules, standards for running machines, standards for maintaining machines, and social security. In its implementation, there are employees who have complied with procedures that support the creation of occupational safety and health set by the company. However, there are still employees who do not comply with the procedures established by the company while working which may endanger both the employees themselves and other employees in the production department. In the production section of PT. Iskandar Indah Printing Textile there are some employees who have worked according to the standard of existence and there are also some employees who have not worked according to the standard of existence set by PT. Iskandar Indah Printing Textile Surakarta. Research conducted by Indah [3] on "Evaluation of the Application of Occupational Safety and Health (K3) in Building Projects in Cirebon Regency". The objectives of the research were: 1) To evaluate the application and constraints of the application of K3 in building projects in Cirebon Regency, 2) to find out the differences in the application of K3 based on the project scale. The research method uses a survey approach to 10 contractors in 10 building projects with 2 floors or more in Cirebon Regency. This research was conducted through a survey of 10 contractors in 10 building projects in Cirebon Regency. Projects that became the object of research consisted of shopping/shopping projects (70%), hotels (20%) and education (10%). The project is a building with a number of floors between 2 to 10 floors, with a total building area of 254 m² – 15,789 m². This study is limited to 6 (six) aspects of the application of OSH according to the ILO (2005) due to the wide scope of the application of OSH, including: 1) the use of personal protective equipment (PPE), 2) Emergency conditions, 3) Structural Works, Scaffolding and Stairs, 4) Use of Toxic and Hazardous Materials, and 5)

Health and Hygiene of the Work Environment. Some projects have not carried out certain types of work (eg glass and roof work), so these aspects are not the object of observation in this study. Data collection techniques using a questionnaire. The data analysis technique used the average difference test for data of more than two sample groups, namely the One Way Anova Test. The results of the study indicate that K3 has not been fully implemented because it is related to budget constraints and the culture of workers who are not familiar with the application of K3. The application of K3 for the construction of houses and shop houses will affect the selling price of the house charged to the buyer. The results of statistical testing of differences in the application of K3 based on the project scale found that the application of K3 was different in all aspects, namely: the use of PPE ($p=0.060$), Emergency Conditions, Structural Work, Scaffolding, Stairs ($p=0.040$), Use of Toxic and Hazardous Materials ($p=0.040$). = 0.068), Occupational Health and Hygiene ($p = 0.047$). Beautiful Research (2017). Research conducted by Indah [3] on "Evaluation of the Application of Occupational Safety and Health (K3) in Building Projects in Cirebon Regency". The objectives of the research were: 1) To evaluate the application and constraints of the application of K3 in building projects in Cirebon Regency, 2) to find out the differences in the application of K3 based on the project scale. The research method uses a survey approach to 10. contractor on 10 building projects with 2 floors or more in Cirebon Regency. This research was conducted through a survey of 10 contractors in 10 building projects in Cirebon Regency. Projects that became the object of research consisted of shopping/shopping projects (70%), hotels (20%) and education (10%). The project is a building with a number of floors between 2 to 10 floors, with a total building area of 254 m² – 15,789 m². This research is limited to 6 (six) aspects of the application of OSH according to the ILO (2005) due to the wide scope of application of OSH, including: 1) the use of personal protective equipment (PPE), 2) Emergency conditions, 3) Structural work, scaffolding and ladders, 4) Use of Toxic and Hazardous Materials, and 5) Occupational Health and Hygiene. Some projects have not carried out certain types of work (eg glass and roof work), so these aspects are not the object of observation in this study. Data collection techniques using a questionnaire. The data analysis technique used the average difference test for data of more than two sample groups, namely the One Way Anova Test. The results of the study indicate that K3 has not been fully implemented because it is related to budget constraints and the culture of workers who are not familiar with the application of K3. The application of K3 for the construction of houses and shop houses will affect the selling price of the house charged to the buyer. The results of statistical testing of differences in the application of K3 based on the project scale found that the application of K3 was different in all aspects, namely: the use of PPE ($p=0.060$), Emergency Conditions, Structural Work, Scaffolding, Stairs ($p=0.040$), Use of Toxic and Hazardous Materials ($p=0.040$). = 0.068), Occupational Health and Hygiene ($p = 0.047$). Fridayanti and Kusumasmoro [4] Research. Research conducted by Fridayanti and Kusumasmoro [4] on "Application of Occupational Safety and Health at PT Ferron Par Pharmaceuticals Bekasi". The purpose of this study was to find out how the implementation of occupational safety and health (K3) in the company. PT Ferron Par Pharmaceuticals is a company engaged in the pharmaceutical industry which is growing very rapidly, which applies occupational safety and health (K3) in its production process. Data collection techniques are carried out by observing or observing directly activities related to the application of occupational safety and health, interviews or asking questions to staff that are directly related to the application of occupational safety and health. The data analysis technique used is descriptive. The results showed that the implementation of the OHS management system consisted of 10 steps, namely: stating the commitment, determining the method of implementation, forming an implementation working group, determining the required resources, counseling activities, system reviewing, preparing activity schedules, developing an OHS management system, implementing the system and the certification process Fridayanti and Kusumasmoro [4] concluded that the application of K3 at PT Ferron Par Pharmaceuticals is to protect and ensure the safety and health of every worker and other person in the workplace, and ensure that every source of production is used effectively and does not experience health problems or disease. as a result of work. In addition, the benefits of occupational safety and health at PT Ferron Par Pharmaceuticals are so that employees feel safe when doing their jobs and the company also benefits because they do not have to pay for healing for employees who are injured at work.

Research methods

The method in this research is descriptive qualitative, namely analyzing, describing, and summarizing various conditions, situations from various data collected in the form of questionnaires for the Asanka Building Yogyakarta construction project.

Data collection

To facilitate the author in conducting research by distributing questionnaires, some data are needed, including : Project Location: In this research proposal, it is located at the Asanka Building Yogyakarta Construction project. Asanka Building, East Ring Road, Maguwoharjo, Sleman Regency, DIY. Manpower : Manpower on the Asanka Building construction project.

Questionnaire Distribution Process

The distribution of this questionnaire was carried out to obtain data which would later be used for analysis and discussion in this study. Questionnaires were distributed directly to the respondents. Respondents in this study were workers who worked on the Yogyakarta Asanka Building construction project.

Questionnaire Creation Process

In this study, the questionnaire can be divided into: (three) parts as follows: The introduction section contains the research topic, research objectives and respondents' claims. General project data, including project name information, project location, building type/function, number of floors, and total project duration. General data of respondents include gender, recent training, position in the workplace, respondent's work experience and respondent's knowledge of childbirth safety.

3. RESULTS AND DISCUSSION

This study focuses on occupational safety and health (K3) on the Asanka building project in Yogyakarta, examines the constraints in implementing the OHS program on the Asanka building project in Yogyakarta. Data collection was carried out on the Asanka Yogyakarta building project. Using a respondent template by distributing questionnaires directly to the project field by inviting construction project workers to participate in the construction of the Yogyakarta Asanka Building. The number of questionnaires distributed amounted to 32 questionnaires.

Classification of Respondents.

The distribution of the questionnaire in this test was carried out on the Asanka Yogyakarta building project. Respondents were categorized by age, last education level, position in the project and work experience. These factors are considered to have a significant influence on the implementation of construction projects.

Classification of Respondents Based on Age

Classification of groups of respondents based on the age of the questionnaire can be grouped into 4, namely 25 years, 26-35 years, 36-45 years and 46 years.

| No. | Age | N | Percentage (%) |
|-------|-----------------|----|----------------|
| 1 | 25 years 26 | 24 | 75% |
| 2 | - 35 years 38 - | 7 | 21.9% |
| 3 | 45 years | 0 | 0% |
| 4 | 46 years old | 1 | 3% |
| Total | | 32 | 100% |

Classification of Respondents Based on Last Education

The classification of respondent groups based on their latest education can be grouped into 5 parts, namely groups of respondents who are elementary school graduates, junior high school graduates, high school graduates, students and others. This classification can be seen in Table 5.2

| No. | Last education | Amount | Percentage (%) |
|-------|----------------|--------|----------------|
| 1 | SD | 0 | 0.0% |
| 2 | | 1 | 3.1% |
| 3 | | 8 | 25.0% |
| 4 | Student | 23 | 71.9% |
| 5 | Other | 0 | 0.0% |
| Total | | 32 | 100.0% |

Classification of Respondents by Position in the Project

The classification of respondent groups based on the position in the project they have can be grouped into 6 parts, namely the group of respondents who work as (QC)/QualityControl,(Drafter),(Logistics),(Student),(Implementation), (Site Manager/Project Engineering). This classification can be seen in Table 5.3

| No. | Position in Project 1 QC 2 | Amount | Percentage (%) |
|-------|----------------------------------|--------|----------------|
| | Student Logistics Drafter | 6 | 18.8% |
| | | 8 | 25.0% |
| 3 | | 2 | 6.3% |
| 4 | | 7 | 21.9% |
| 5 | Implementation | 3 | 9.4% |
| 6 | Site Manager/Project engineering | 6 | 18.8% |
| Total | | 32 | 100.0% |

Classification of Respondents Based on Work Experience

Classification of groups of respondents based on their work experience can be grouped into 4 parts, namely groups of respondents with experience less than 10 years (< 10 years), more than 10 to 15 years, 16 to 25 years years and over 25 years. This classification can be seen in Table 5.4

| No. | Respondent Experience In Service Company Construction | Total | Percentage (%) |
|-------|---|-------|----------------|
| 1 | <10 years | 31 | 96.9% |
| 2 | 10-15 years | 0 | 0.0% |
| | 16-25 years | | 3.1% |
| 3 4 | >25 Years | 1 | 0.0% |
| Total | | 32 | 100.0% |

Data on Occupational Safety and Health (K3) Implementation Programs Workplace Safety In Projects

The data from this study includes 32 respondents who are spread over the Asanka development project in Yogyakarta. Respondents responded by filling out a direct questionnaire on occupational safety in the project to verify occupational safety and health at the project.

| No. | | mean | SD | Rank |
|------|---|-------|-------|------|
| 1 | Every worker in the project can reach work with safe. | 4.438 | 0.619 | 3 |
| 2 | A safety fence has been installed on the open space inside project to prevent workers fall. | 4,750 | 0.440 | 1 |
| | The project site has lighting and lighting the good one. | 4.63 | 0.707 | 4 |
| 4 | Signs have been installed safety signs/signs work on a specific area of the project. | 4,531 | 0.671 | 2 |
| Mean | | 4,586 | | |
| SD | | | 0.609 | |

Work Equipment and Clothing

The data in this study include 32 respondents who are workers from the Yogyakarta Asanka Building construction project. Work Equipment and Clothing that are part of the K3 Component.

| No. | | mean | SD | Rank |
|------|--|-------|-------|------|
| 1 | The company provides work clothes, helmets, work clothes, shoes boots, gloves, masks, belts safety, etc. | 4.625 | 0.609 | 1 |
| 2 | All the equipment is in good condition and can be used according to its function. | 4,531 | 0.621 | 5 |
| 3 | Workers use equipment and work clothes for work. | 4.281 | 0.813 | 6 |
| 4 | The company provides work safety equipment such as stairs, nets, railings, etc. | 4,531 | 0.671 | 4 |
| 5 | Existing equipment and machines are put into operation by experienced workers. | 4,594 | 0.665 | 2 |
| 6 | Perform maintenance on work tools which is frequently used | 4,594 | 0.665 | 3 |
| Mean | | 4,526 | | |
| SD | | | 0.674 | |

The data in this study includes 32 respondents spread across construction projects Construction of the Asanka Building Yogyakarta. The rating for each component can be seen in table 5.7

| No. | | mean | SD | Rank |
|------|---|-------|-------|------|
| 1 | Smoking ban has been enforced in the project area to avoid fire. | 4,551 | 0.840 | 1 |
| 2 | Sufficient fire extinguishers are available. | 4,551 | 0.707 | 3 |
| 3 | Has limited combustible materials. | 4,551 | 0.893 | 4 |
| 4 | Has provided a place to store and dispose of flammable materials/items. | 4,551 | 0.716 | 2 |
| Mean | | 4,551 | | |
| SD | | | 0.739 | |

Protection of the Public

The data in this study includes 32 respondents who are spread over the construction project of the Asanka Building Yogyakarta. The rating for each component can be seen in table 5.8

| No. | | mean | SD | Rank |
|------|--|-------|-------|------|
| 1 | The fence and entrance have been installed and come out in good shape around the location project. | 4.656 | 0.602 | 1 |
| 2 | Signs/signs/information have been installed regarding projects around the project site. | 4.656 | 0.653 | 2 |
| 3 | Installation of the K3 sign board, which contains, among others a slogan that reminds of the need to work safely, etc. | 4,500 | 0.622 | 3 |
| 4 | There are sufficient rescue paths as alternative route in an emergency. | 4.406 | 0.712 | 4 |
| Mean | | 4,555 | | |
| SD | | | 0.647 | |

Occupational Health and Safety (K3) Program Data

| No | K3 Program | mean | SD | Rank |
|----|------------------------------|-------|-------|------|
| 1 | Workplace Safety In Projects | 4,586 | 0.609 | 1 |
| 2 | Work Equipment and Clothing | | 0.674 | 4 |
| 3 | Fire | 4,551 | 0.739 | 3 |
| 4 | Protection of the Public | 4,555 | 0.647 | 2 |
| 5 | Occupational Health | 4,475 | 0.703 | 5 |

From the results of this study on the Yogyakarta Asanka Building Construction project which is the first rank in the K3 program is Workplace Safety in the Project with a mean value of 4.4,519 and a standard deviation of 0.061. Workplace Safety in Projects What is meant is construction safety which is very important for the smooth process of development projects, especially for the workforce, therefore we must know what is meant by construction security. The following are 2 definitions of OSH in the field of construction which are defined based on philosophical and scientific aspects: Based on Philosophical Aspects, If viewed from a philosophical aspect, K3 is a fruit of thought in an effort to ensure the integrity and perfection of both physical and spiritual

for the workforce in particular towards the work (work) and culture. Based on the Scientific Aspect, in the application of science, K3 is an effort or also a way to be able to prevent the possibility of work accidents, occupational diseases, fires, explosions and environmental pollution, and other things.

4. CONCLUSION

Based on the results of research that has been carried out by the author by distributing questionnaires to 32 respondents in the Yogyakarta Asanka building construction project, the following conclusions will be obtained: obstacles to date in the implementation of occupational safety and health. (K3) due to constraints from the company. This happens because the workers prioritize the demands of basic or basic needs, do not know the guarantees or the importance of occupational safety and health (K3) in construction projects. Besides that, there are many complaints from workers about personal protective equipment (PPE), inappropriate management, problems with materials, labor, equipment, finances, and an unsupportive environment that hampers project implementation. And inevitably lead to project delays. All of this creates obstacles in the application of occupational safety and health (K3) at construction sites. Suggestion. For construction workers, work safety must be given more attention and priority by respecting work safety rules and following work safety rules through personal protective equipment. (PPE) and use professional tools to avoid the risk of accidents at the construction site. This is to facilitate the implementation of the occupational health and safety (K3) program that has been provided by the company to its workers. Construction service companies/contractors should pay more attention to and respond to the needs of workers such as personal protective equipment (PPE) and worker aids at work, as well as pay attention to occupational safety and health (K3) program procedures to improve programs that have been implemented in construction projects. For government / inspection services Occupational health and safety (K3) programs should be more active in monitoring the progress of the development process and conducting periodic audits of existing programs. current project.

ACKNOWLEDGMENT

REFERENCES

- [1] B. Leyn, S., P., W., C., "Evaluation of the Application of Occupational Safety and Health (K3) (Case Study at PT Indokon Raya)," *Res. J. Civ. Eng. Study Program, Fac. Eng. Univ. August 17, 1945 Surabaya*, 2018.
- [2] P. Pamungkas, B., A., Santoso, D., & Ninghardjanti, "Implementation of Occupational Health and Safety for Production Division Employees of PT. Iskandar Indah Printing Textile Surakarta," 2018.
- [3] A. Indah, "Evaluation of the Application of Occupational Safety and Health (K3) in Building Projects in Cirebon Regency," 2017.
- [4] R. Fridayanti, N., & Kusumasmoro, "Application of Occupational Safety and Health at PT Ferron Par Pharmaceuticals Bekasi.," *J. Off. Adm.*, vol. 4.