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Overview of Usage Behavior of Personal Protective Equipment (PPE) Among Workers at PT. X in 2024

Wahyu Siti Yuniyanti[1], Izzatul Millah[2]
[1,2]*Public Health Study Program, Universitas Indonesia Esa Unggul, Indonesia*

Abstract

Occupational safety and health are the most important things. Based on Law Number 2 of 2017 concerning Construction Services, Article 52 states that service providers and sub-service providers in providing construction services must meet security, safety, health and sustainability standards. With occupational safety and health, workers can do all their work safely. The aim of this research is to describe the behavior of using Personal Protective Equipment (PPE) among workers at PT.X in 2024. The method used in this research is quantitative analytic with a cross sectional design study approach. The respondents of this study were 100 workers at PT. X. The results of this research show that of all the respondents observed, it was found that the majority of them complied with using PPE while carrying out their duties, namely 85.0%, 88.0%. 92.0% obediently wear a helmet when carrying out their duties, 92.0% obediently use safety shoes, 94.0% obediently use a helmet, 91.0% obediently use a mask, 93.0% obediently use goggles, and 93.0% obediently use gloves. Every employee must be educated to understand the benefits of using personal protective equipment when working and every employee must also be disciplined and consistent in using personal protective equipment while carrying out their duties at work.

Keywords
Behavior, PPE, Workers, Company

I. Introduction

Occupational safety and health are the most important things. Based on Law Number 2 of 2017 concerning Construction services Article 52 that service providers and sub-service providers in the implementation of construction services must meet safety, health and sustainability standards. With occupational safety and health, workers can do every job safely.

Based on Law No. 13 of 2003 article 87 that every company is required to implement the Occupational Safety and Health Management System (SMK3) and integrated with the company's management system. The Company's efforts in implementing K3 include, Tool Box Meeting activities, Safety Morning Talk, HSE meetings, safety patrols, installation of signs and banners, installation of posters, worker training and simulations. In addition, the company also conducts inspections and evaluations to ensure that the program runs well and workers comply with the policies or standard procedures that have been set by the company,

According to The Occupational Safety & Health Administration, there were 10 biggest violations in 2018 consisting of what regulations were violated and the number of violations based on initial data. Of the 10 biggest violations, violations of the use of personal protective equipment (PPE) were in 10th place with a total of 1536 violations. Based on these data, for the first time, violations of personal protective equipment (PPE) were included in the top 10 violations (OHSA, 2018).

Occupational Safety and Health Administration (OSHA) requires the use of personal protective equipment for workers to reduce the risk of work accidents that can occur at any time at construction project sites. Companies are required to prepare or provide personal protective equipment used by workers every time they work and use it according to applicable procedures. Even though hazard control efforts are carried out as a priority, human error is one of the factors causing work accidents which is estimated to reach 84%-94%. As an illustration, work accidents that occur on construction projects are caused by the non-use of personal protective equipment available in the workplace (Agustine, 2015).

According to research conducted by Andriyanto (2017), it was stated that there are several factors related to the behavior of using personal protective equipment (PPE) in workers. One of them is the relationship between knowledge and behavior in using personal protective equipment (PPE), the results of this study stated that workers who have good knowledge are more obedient in using personal protective equipment (PPE) than workers who have less knowledge. The findings of this study are in line with research conducted by Olanda et al. (2020) which states that there are several factors related to the behavior of using personal protective equipment (PPE) in workers. The results of this study also show that employees who use personal protective equipment (PPE) tend to use personal protective equipment (PPE) effectively compared to employees who have negative attitudes. The target of the study was workers in both the formal and informal sectors.

Based on the results of a preliminary study by conducting observations or observations in the field, there were 6 out of 10 workers who did not use complete personal protective equipment (PPE) provided by the company such as gloves, glasses, helmets, vests, safety shoes. And based on interviews with workers who did not use complete personal protective equipment (PPE), this was influenced by several factors, namely discomfort when using personal protective equipment (PPE), feeling that personal protective equipment (PPE) could hinder work and feeling that they had been working for a long time so they did not need to use personal protective equipment (PPE). Based on the description of the problems above, the researcher is interested in discussing "Overview of Usage Behavior of Personal Protective Equipment (PPE) Among Workers at PT. X in 2024". By conducting this research, it is hoped that it can improve work culture, especially in the use of Personal Protective Equipment (PPE) and can minimize the number of work accidents. And if research is not carried out, there is a potential risk of danger such as work accidents received by workers and company.

II. Research Methods

This type of research uses an analytical quantitative research design using a cross-sectional research design. Data collection with dependent variables and independent variables is carried out at the same time. This study uses a primary data collection method. Primary data is obtained through interviews and observations using a checklist sheet. The data variables obtained through primary data are the use of Personal Protective Equipment (PPE) (dependent variable). This study aims to determine the description of the behavior of the use of personal protective equipment among workers at PT X in 2024-2025. This research was conducted from November 2024 to January 2025. The respondents in this study were 100 workers at PT.X who were selected using the total sampling technique. Observations were carried out directly by the researcher on all workers while carrying out

their duties. The method used in this study is analytical quantitative with a cross-sectional design study approach.

III. Results and Discussion

3.1 Results

a. Demographic Data

In the analysis of demographic data in this study, there are 6 variables displayed, namely age, gender, religion, education level, marital status and length of service. An explanation of the description of each variable can be seen in table 1 along with its explanation.

Table 1. Frequency Distribution of Respondents According to Demographic Data

Variables	Frequency	Percentage
Age		
- Mean (average)	28.58 years	-
- Median	27.0 years	-
- Mode	21 years	-
- Minimum	18 years	-
- Maximum	47 years old	-
Gender		
- Male	100	100.0
- Female	-	-
Religion		
- Islam	92	92.0
- Christian	7	7.0
- Catholic	1	1.0
Married status		
- Single	46	46.0
- Marry	54	54.0
Level of education		
- High School/Vocational School	93 3 4	93.0 3.0 4.0
- D3		
- S1		
Years of service		
- 1 year	10	10.0
- 2 years	90	90.0

Based on the table above about the frequency distribution of respondents according to demographic data (age, gender, religion, marital status, education level and length of service) shows some information as follows: first, the distribution of respondents by age is known that from 100 respondents studied, the average age of respondents was 28.58 years, most respondents were 21 years old, the youngest age was 18 years old and the oldest age was 47 years old. Second, the frequency distribution of respondents by gender was found that all respondents (100.0%) were male, there were no female respondents in this study. Third, the frequency distribution of respondents by religion was found that the majority of

respondents were Muslim, namely 92.0%, followed by Christians 7.0% and Catholics 1.0%.

Fourth, the frequency distribution of respondents according to marital status found that of all respondents studied, the majority of them were married / already married as much as 54.0%, and the rest were unmarried, which was 46.0%. Fifth, the frequency distribution of respondents according to education level, it was found that the majority of respondents' education level was high school / equivalent, which was 93.0%, followed by D3 as much as 3.0% and S1 4.0%. And the last is the frequency distribution of respondents according to work period, it was found that the majority of respondents' work period was 2 years, which was 90.0% and only 10.0% had only worked for 1 year.

b. Compliance with the use of PPE

Table 2. Frequency Distribution of Respondents According to Compliance with Use of PPE

Variables	Category	Frequency	Percentage
Compliance	Not obey	15	15.0
	Obedient	85	85.0
	Total	100	100.0
Use of Helmet	No	12	12.0
	Yes	88	88.0
	Total	100	100.0
Safety Shoes	No	8	8.0
	Yes	92	92.0
	Total	100	100.0
Use of Vests	No	6	6.0
	Yes	94	94.0
	Total	100	100.0
Use of Masks	No	9	9.0
	Yes	91	91.0
	Total	100	100.0
Use of Google	No	7	7.0
	Yes	93	93.0
	Total	100	100.0
Use of Gloves	No	7	7.0
	Yes	93	93.0
	Total	100	100.0

Based on the table above regarding employee compliance in using personal protective equipment (PPE), it was found that of all respondents observed, the majority of them were compliant in using PPE while carrying out their duties, namely 85.0%, and only 15.0% were not compliant in using PPE. Furthermore, use of helmets, use of safety shoes, use of vests, use of masks, use of goggles and gloves as follows: First, distribution of respondents according to helmet use found that from all respondents observed, the majority of respondents were obedient in using helmets while working, which was 88.0%. However, 12.0% of them did not always use helmets while carrying out their duties. Second, the

frequency distribution of respondents according to the use of safety shoes while working showed that from all respondents observed, the majority used safety shoes, which was 92.0%, and there were 8.0% who were negligent, not using safety shoes while carrying out their duties.

Third, the behavior of respondents in using vests while working found that of all respondents observed, the majority of them were disciplined in using helmets when carrying out their duties, namely 94.0%, only 6.0% did not comply with using vests when carrying out their duties. Fourth, the behavior of respondents in using masks while carrying out their duties found that the majority of them always used masks, namely 91.0%, and there were 9.0% who did not comply with the rules for using masks when carrying out their duties. Fifth, the behavior of using goggles while carrying out their duties found that of all respondents studied, the majority always used goggles while carrying out their duties, namely 93.0%, and only 7.0% did not always use goggles. Sixth, the behavior of respondents in using gloves while working found that of all respondents studied, the majority were disciplined/compliant in using gloves, namely 93.0% and only 7.0% did not always use gloves when carrying out their duties.

3.2 Discussion

a. Compliance with Use of PPE

The results of this study are in line with research conducted by Elza, Radyiah, Darwis (2023) that as many as 55.17% of workers use PPE and 44.83% of workers do not use PPE while working. According to Bloom's behavioral theory which explains that behavior is a function of predisposing factors, namely factors that exist within the individual in which there is an individual's attitude. Respondents' attitudes influence respondents' actions in using PPE in the workplace (Sudarmo, 2016). The results of data analysis show that as many as 85.0% of workers have a positive attitude compared to employees who have a negative attitude of only 15.0%. Attitudes can be positive and negative, so that the attitude of workers in using PPE is only the workers themselves who can change it and the lack of clear information or socialization about the use of personal protective equipment is unable to form a positive attitude for workers.

According to the researcher, the implementation of the use of PPE is not only the responsibility of the company, but also the responsibility of each worker. Companies are required to provide PPE that meets standards and ensure its consistent use. Meanwhile, workers must be disciplined in using PPE and understand how to use it correctly. The use of PPE is not only about compliance with regulations, but also about building a safety culture in the workplace. By prioritizing safety and health, companies can create a productive and accident-free work environment. Safety is the right of every worker. With the proper use of PPE, together we can prevent work accidents and maintain the welfare of all employees in the company. Let's make safety part of our commitment to a better future.

b. Use of Helmet

The results of this study are in line with research conducted by Lubis, et al. (2023) that the majority of respondents use PPE, which is 60.0%. In his study, it was explained that there are 3 factors that cause an employee to comply with using PPE, namely: knowledge, attitude and action. These variables significantly contribute to employee behavior. Furthermore, it is also in line with Falih's research (2021) that the majority of respondents use helmets while working at PT Imaji Cipta Semarang, which is 66.7%.

Currently, many companies have emphasized that work safety is a top priority in every activity in the company, especially in high-risk environments. One of the most effective

preventive measures is the use of safety helmets. Helmets are not just work equipment, but are the main protector of the head from various potential hazards in the work environment. The head is a very vital part of the body. Head injuries, no matter how small, can have a serious impact on employee health and productivity. In work environments such as construction projects, manufacturing, or other industrial areas, the risk of falling objects, hard impacts, or being hit by heavy equipment is often unavoidable. Safety helmets are designed to absorb impact energy and protect the head from injury.

According to researchers, safety is a valuable investment for the future. By being disciplined in using safety helmets, employees can work more safely, calmly and efficiently. Let's work together to make work safety a culture that we uphold. Thus, every employee must be aware and obedient to use a helmet while carrying out their duties.

c. Use of Safety Shoes

Occupational safety is a shared responsibility that must always be prioritized in every workplace. One important step to protect employees from the risk of accidents is the use of safety shoes. Safety shoes are not only part of safety regulations, but also the main protector for employees' feet in a work environment full of risks. The feet are the part of the body that is often exposed to risks in the workplace, such as being hit by heavy objects, being hit by sharp objects, slipping, or being exposed to chemicals. Without adequate protection, foot injuries can result in serious disorders, even hampering employee productivity. Safety shoes are specifically designed to reduce this risk by providing extra protection.

According to researchers, consistent use of safety shoes not only protects employees from injury, but also creates a safe and professional work culture. By protecting their feet, employees can work more confidently, feel safe, and be more productive. In addition, companies can also reduce the potential for work accidents, which ultimately increases operational efficiency. Work safety starts from simple things, such as the use of safety shoes. A pair of safety shoes can be the difference between serious injury and optimal protection. Let's make safety a top priority and show our commitment to a safer work environment. Remember, safety shoes are not just work equipment, but an investment to protect the health of employees.

d. Use of Vests

Occupational safety is a fundamental element that must be a primary concern in every work environment. One of the personal protective equipment that is often overlooked but has a very important role is the safety vest. This vest is not only a symbol of compliance with safety standards, but also an effective protective tool in preventing work accidents. Safety vests, or commonly called safety vests, are designed to increase worker visibility in various work conditions. In high-risk work environments such as construction projects, highways, or industrial areas, visibility is the main key to preventing accidents. Safety vests equipped with bright colors and reflective strips help ensure workers are clearly visible, especially in dark areas or when lighting conditions are poor.

Safety can only be guaranteed if workers consistently use safety vests according to the needs of the work environment. The use of safety vests is not only a matter of compliance with the rules, but also a form of responsibility towards oneself and others. Employees must ensure that the vests used meet standards and remain in good condition, such as not torn or missing reflective strips. Safety starts from simple things, such as wearing a safety vest. With this small step, we can create a safer work environment and protect each individual from the risk of accidents. Remember, safety vests are real protectors in

maintaining the safety of you and your coworkers. Thus, the researcher appeals to every worker to make safety a top priority in every step of the work.

e. Use of Masks

The results of this study are in line with research conducted by Falih (2021) that most respondents used masks, namely 60.0%. Occupational safety and health are serious provisions in every activity in the work environment. One of the personal protective equipment (PPE) that has an important role is a mask. Masks not only function to protect employees from health risks due to exposure to dust, hazardous gases, or particles in the air, but also prevent potential work accidents that can occur due to respiratory disorders or exposure to hazardous materials. In many types of work, workers are exposed to various risks that are not always visible, such as: Dust at construction sites or factories; Toxic gases or chemicals in laboratories or industrial areas; Small particles that can harm the respiratory tract, such as sawdust or metal.

Masks are the main protection for filtering inhaled air, so that employees can work safely without the risk of health problems or accidents due to shortness of breath or exposure to hazardous substances. Some of the Functions and Advantages of Masks are as follows: First, filtering hazardous particles: masks are designed to filter dust, powder, or other small particles so that they are not inhaled by workers; Second, preventing inhalation of toxic gases: Special masks, such as respirators, protect employees from hazardous chemical gases or vapors; Third, protecting against infection: in medical or laboratory work, masks also prevent the spread of microorganisms that can cause disease; Fourth, increasing work safety (with good respiratory protection, employees can concentrate fully without being disturbed by exposure to polluted air).

f. Use of Googles

The results of this study are in line with research conducted by Falih (2021) that only 56.7% of respondents use Googles while working. Occupational safety is an important aspect that must always be prioritized, especially in a work environment that is full of risks. One of the personal protective equipment (PPE) that plays a vital role in protecting employees is googles or safety glasses. This tool is designed to protect the eyes from various hazards such as dust, debris, chemicals, or radiation, which can threaten the safety and health of employees.

The effectiveness of safety glasses depends on the consistency of their use. Employees need to wear goggles according to the type of job risk and ensure that the equipment meets safety standards. In addition, maintaining the cleanliness and condition of the glasses is also important so that protection remains optimal (Sumarna, 2018). By using goggles, employees not only protect themselves from injury but also increase their sense of security while working. This creates a more productive work environment and is free from the worry of accidents. In addition, companies can minimize potential losses due to work accidents involving eye injuries.

g. Use of Gloves

Occupational safety is something that cannot be compromised, especially in high-risk work environments. One of the personal protective equipment (PPE) that plays an important role in protecting employees is safety gloves. Gloves are specially designed to protect hands from various potential hazards that can cause injury, such as cuts, burns, or exposure to hazardous chemicals.

The use of safety gloves is only effective if used correctly and consistently. Employees need to ensure that the gloves used are appropriate for the type of work and the risks faced. In addition, gloves should be checked regularly to ensure there is no damage that could reduce their protection. By wearing safety gloves, employees can work more safely, confidently, and focused without worrying about the risk of hand injury. This also helps companies create a more productive work environment with minimal risk of accidents.

h. Distribution of Compliance with the Use of Personal Protective Equipment by Religion, Marital Status, Education Level and Length of Service

The results of the analysis of the distribution of compliance with the use of PPE according to demographics obtained the following results: First, the results of the analysis of the frequency distribution of respondents' compliance in using PPE according to the type of religion they adhere to found that the majority of all religious adherents (Islam, Christianity and Catholicism) were compliant in using PPE, the average level of compliance was between 84.5% - 100.0%. Second, the results of the analysis of the frequency distribution of respondents' compliance in using PPE according to marital status found that on average, married and unmarried respondents were equally compliant in using PPE, the percentage was between 84.8% -95.7%. Third, the results of the analysis of the distribution of compliance with the use of PPE according to education level found that the majority of respondents were compliant in using PPE for each level of education, namely: SMA/SMK, D3 and S1, the percentage of compliance was between 83.9% - 100.0%. Fourth, the results regarding the distribution of compliance with the use of PPE according to length of service found that the majority of respondents were compliant for those with a length of service of 2 years and for those with a length of service of 1 year, there were varying levels of compliance/non-compliance.

IV. Conclusion

Based on the research results and discussion in the previous chapter, several things can be concluded, as follows:

1. Of all the respondents observed, it was found that the majority of them were compliant in using PPE while carrying out their duties, namely 85.0%, and only 15.0% were not compliant in using PPE.
2. The results of the study on the behavior of PT X employees in using helmets while working found that the majority of respondents always wear helmets while working, which is 88.0%. And there are 12.0% of them who do not comply with wearing helmets while carrying out their duties.
3. The results of the analysis of respondents' behavior in using safety shoes found that the majority of them used safety shoes while working, namely 92.0%, and only 8.0% of them did not use safety shoes.
4. The results of the analysis of respondents' behavior in using helmets while working found that the majority of them used helmets, namely 94.0%, and only 6.0% did not use helmets.
5. The results of the respondent analysis on the use of masks found that the majority used masks while working, namely 91.0%, and only 9.0% did not comply with the rules on wearing masks when carrying out their duties.
6. The results of the respondent analysis on the use of Googles found that 93.0% used Googles while working, and only 7.0% were not obedient in using Googles.

7. The results of the respondent analysis regarding the use of gloves found that the majority used gloves, namely 93.0% and only 7.0% were non-compliant.
8. The results of the analysis of the frequency distribution of respondents' compliance in using PPE according to the type of religion they adhere to found that the majority of all religious adherents (Islam, Christianity and Catholicism) were compliant in using PPE, with an average level of compliance between 84.5% - 100.0%.
9. The results of the analysis of the frequency distribution of respondents' compliance in using PPE according to marital status found that on average, married and unmarried respondents were equally compliant in using PPE, with a percentage between 84.8%-95.7%.
10. The results of the analysis of the distribution of compliance with the use of PPE according to education level found that the majority of respondents were compliant in using PPE for each level of education, namely: SMA/SMK, D3 and S1, the percentage of compliance was between 83.9% - 100.0%.
11. The results regarding the distribution of compliance with the use of PPE according to length of service found that the majority of respondents were compliant for those with a length of service of 2 years and for those with a length of service of 1 year, there were varying levels of compliance/non-compliance.

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