

DOMINANT FACTORS INFLUENCING THE LEVEL OF COMPLIANCE WITH THE USE OF PPE (AMONG CONSTRUCTION WORKERS IN REHABILITATION AND MAINTENANCE OF COMMUNITY HEALTH CENTER IN TUBAN DISTRICT)

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ABSTRACT

Kepatuhan untuk selalu memakai alat pelindung diri menjadi salah satu faktor penting dalam menekan angka terjadinya kecelakaan kerja. Faktor yang menjadi dasar pada perilaku kepatuhan pemakaian alat pelindung diri sangat beragam, salah satu di antaranya yaitu peraturan perusahaan, pengawasan, pengetahuan pekerja, ketersediaan alat pelindung diri, *reward* dan *punishment*, serta sikap pekerja. Penelitian di Puskesmas Kabupaten Tuban bertujuan untuk menganalisis faktor dominan yang mempengaruhi tingkat kepatuhan penggunaan APD pada pekerja konstruksi rehabilitasi dan pemeliharaan. Penelitian kuantitatif menggunakan metode observasional serta desain *cross-sectional*. Populasi penelitian melibatkan pekerja konstruksi rehabilitasi dan pemeliharaan Puskesmas di Kabupaten Tuban, dengan sampel sebanyak 53 pekerja yang dipilih menggunakan teknik *probability sampling* dengan *simple random sampling*. Tingkat kepatuhan penggunaan APD sebagai variabel dependen sedangkan pengetahuan, sikap, dorongan rekan kerja, HSE *inspection*, *reward*, dan *punishment* sebagai variabel independen. Instrumen menggunakan kuesioner. Analisis data menggunakan uji statistik Regresi Logistik Berganda dengan SPSS. Hasil uji diperoleh nilai nilai $p < 0,05$, dengan variabel sikap memiliki nilai $Exp(B)$ (14,423) paling tinggi dibanding variabel lainnya artinya terdapat pengaruh pengetahuan, sikap, dorongan rekan kerja, *reward* dan *punishment* dengan tingkat kepatuhan penggunaan APD, dan sikap merupakan faktor paling dominan. Saran perbaikan yang diberikan adalah para tenaga kerja bersikap untuk lebih terbuka pada konsep budaya keselamatan kerja di tempat kerja.

Kata Kunci: dorongan rekan kerja; HSE inspection; kepatuhan penggunaan APD; pengetahuan; sikap

ABSTRACT

Compliance to always wear personal protective equipment is one of the important factors in reducing the number of work accidents. Factors that become the basis for compliance behavior in wearing personal protective equipment are very diverse, one of which is company regulations, supervision, worker knowledge, availability of personal protective equipment, rewards and punishments, and worker attitudes. Research at the Tuban Regency Health Center aims to analyze the dominant factors that influence the level of compliance with the use of PPE in rehabilitation and maintenance construction workers. Quantitative research using observational methods and cross-sectional design. The study population involved rehabilitation and maintenance construction workers of Puskesmas in Tuban Regency, with a sample of 53 workers selected using probability sampling technique with simple random sampling. The level of compliance with the use of PPE as the dependent variable while knowledge, attitude, peer encouragement, HSE inspection, reward, and punishment as independent variables. The instrument used a questionnaire. Data analysis using Multiple Logistic Regression statistical test with SPSS. The test results obtained ap

value <0.05, with the attitude variable having the highest Exp(B) value (14.423) compared to other variables, meaning that there is an influence of knowledge, attitude, peer encouragement, reward and punishment on the level of compliance with the use of PPE, and attitude is the most dominant factor. The suggestion for improvement is for the workforce to be more open to the concept of safety culture in the workplace.

Keywords: *attitude; HSE compliance; HSE inspection; knowledge; peer encouragement*

1. INTRODUCTION

Globally, construction (Sehsah et al., 2020) considered as the most risk industry (twice) compared to type work others, and there are more of 60,000 accidents annual fatal work worldwide has root causes that include environment Work No safe (eg: organization) bad work, management location, equipment and supplies) and/or inappropriate behavior safe (bad knowledge) about safety work, low practice use of PPE during work). Researchers (Bamfo-Agyei et al., 2023), state that sector construction is industry congested work, where the work is done Good manually or with help machine, but work This own potential dangers and risks that can occur cause accident, implementation Occupational Safety and Health (K3) has become priority worldwide and implemented in many countries.

According to Directorate General of Construction Development In 2019, the sector Construction in Indonesia contributes 32% of total accidents work, make it sector with level accident highest (Ihsan & Nurcahyo, 2022). Researcher (Saputra & Tandedi, 2021), state that accident in the sector This covering fall from height, fall at the same level, absorption, hit objects, slipping, tripping, burning, electrocution, with accident consequence caught object as the most frequent happened, type the most dangerous accident is fall from height. The Ministry of Manpower of the Republic of Indonesia reported that amount accident work and disease consequence Work in a way national Keep going experience improvement every year, in 2021 there were 234,370

cases recorded, an increase of 5.7% compared to with 221,740 cases in 2020. Province with amount case most is West Java with 3,858 cases, followed by Banten with 600 cases, DKI Jakarta 417 cases, and East Java is in the top position. fourth with 345 cases. The figure is become indication that implementation of K3 (one of them) related practice use of PPE during work) must the more become priority for the world of work in Indonesia.

Based on observation beginning researchers in March 2024 on worker construction rehabilitation and maintenance health center Regency Tuban, which is where work rehabilitation and maintenance Health Center is one of the efforts taken by the Health and Disease Control Service Resident Regency Tuban For increase quality service health in the community, in effort implementation work Personal Protective Equipment (PPE) is required used by workers, reality on the ground at work in 2023 40% of 80 workers were found No using PPE (such as: shoes) safety, safety helmet, gloves hand) so that potential experience accident work. Worker PPE standards construction rehabilitation and maintenance health center Regency Tuban For work below namely: protector head, protector eye, protector breathing, sheath hand, leg protectors and vest safety, while For work at height including: protector head, protector eye, protector respiratory, protective hearing, protector hand, tool protector fall protection, leg protectors and vests safety.

Compliance in use tool protector self-become factor key in reduce accident

work, research (Huda et al., 2021) found that an employee with lack of knowledge obedient. Because Once experience accident work, based on draft This behavior influenced by a series of an event that precedes (antecedent) and is followed by a consequence, which then push behavior the for repeat. Research This done with objective knowing f actor dominant influencing level compliance use of PPE by workers construction rehabilitation and maintenance health centers in the District Tuban.

2. RESEARCH METHODS

Study This is studies quantitative with method cross - sectional study was conducted through observation in very time at the health center Regency Tuban. Population study this as many as 60 people with sample as much as as many as 53 respondents with inclusion criteria were all workers who were present at the workplace and workers who were willing to become respondents. Exclusion criteria were workers who were absent such as sickness, permission, and leave, and did not involve pregnant women. Sampling selection use technique probability sampling and simple random sampling, with data collection through questionnaire.

Variables its independence covering knowledge, attitude, motivation colleague work, HSE inspection, reward, and punishment, while variable its dependents is compliance use of PPE.

The knowledge variable questionnaire is the provision of checklists in accordance with workers' understanding of the definition of PPE, the purpose of using PPE, the importance of using PPE, the priority of using PPE, the existence of accidents due to negligence in using PPE. Research on the validity and reliability of the questionnaire has been proven in research (Rahmawati et al., 2022).

The attitude variable questionnaire is the provision of checklists in accordance with workers' perceptions of the need to

use PPE, the use of PPE to avoid accidents, the use of PPE to avoid the risk of danger, the use of PPE provided by the company, the obligation to use PPE, always using PPE even without supervisor supervision, reprimanding or reminding workers who do not use PPE. The questionnaire used is from research (Rahmawati et al., 2022).

The questionnaire for the coworker encouragement variable is the provision of checklists in accordance with workers' perceptions of coworker involvement in reminding the use of PPE, coworker involvement in reminding workplace risk hazards, praise from coworkers for using PPE properly and correctly, coworkers who are indifferent if they find workers without using PPE. The questionnaire used in the study (Melda & Darmawan, 2020) which has been tested for validity and reliability.

The reward and punishment variable questionnaire is the provision of checklist marks according to the worker's experience of giving awards (praise, certificates, prizes/money, promotions) for workers who are disciplined in using PPE, giving sanctions (warnings, letter warnings, salary deductions, fines, postponement of promotions) for workers who are not disciplined in using PPE. The questionnaire used in the study (Cahyani & Widati, 2020) which has been tested for validity and reliability.

Data analyzed using Logistic Regression test Multiple. Research this already get information suitability ethics from Research Ethics Commission of Universitas Muhammadiyah Gresik with number 033/KET/II.3.UMG/KEP/A/2024

3. RESULTS AND DISCUSSION

Table 1 Influence Knowledge with Compliance Level Use of PPE

Knowle dge	Compliance Level Use of PPE		Total
	Not obey	Obedien t	

	f	%	f	%	f	%
Not enough	19	90.5	0	0.0	19	35.8
Enough	2	9.5	0	0.0	2	3.8
Good	0	0.0	32	100	32	60.4
Total	21	100	32	100	53	100
p-value						0.020

Based on Table 1, it shows that the level of compliance with the use of PPE with workers' knowledge of PPE that is lacking is the most non-compliant, namely 19 workers (90.5%) compared to compliant, namely 0.0%. The level of compliance with the use of PPE with workers' knowledge of PPE that is sufficient is the most non-compliant, namely 2 workers (9.5%) compared to compliant, namely 0.0%. The level of compliance with the use of PPE with workers' knowledge of PPE that is good is the most compliant, namely 53 workers (100%) compared to non-compliant, namely 0 workers (0.0%).

The results of the inferential test in Table 1 using Multiple Logistic Regression analysis show a p value of 0.020, which is smaller than 0.05, so H1 is accepted. Showing a significant influence between knowledge and the level of compliance with the use of PPE in rehabilitation and maintenance construction workers at the Tuban Regency Health Center. The results of this study are in line with his research (Prima & Riandadari, 2020) showing that one of the factors influencing the discipline of using PPE is knowledge. According to (Hakim & Febriyanto, 2020), knowledge is information that can be used in taking action, determining choices, and developing new plans and strategies. Research (Kurniadi & Budiono, 2024) stated that education plays a role in increasing workers'

awareness to control themselves, including in compliance with the use of PPE. Knowledge and understanding can be increased to prevent risky behavior and improve safety culture (Juwita & Budiono, 2024).

Based on the results of this study, construction workers will work safely if they are equipped with the necessary safety knowledge, in addition, poor coordination between supervisors and workers can cause serious hazards and accidents at construction sites. Workers who have knowledge of job hazards and their preventive measures will strive to maintain the role and importance of compliance in the use of PPE.

Table 2 Influence Attitude with Compliance Level Use of PPE

Attitude	Compliance Level Use of PPE				Total	
	Not obey		Obedient		f	%
	f	%	f	%		
Negative	21	100	4	12.5	25	47.2
Positive	0	0.0	28	87.5	28	52.8
Total	21	100	32	100	53	100
p-value						0.016

Based on Table 2, it shows that the level of compliance with the use of PPE with workers' attitudes towards PPE that are negative is the most non-compliant, namely 21 workers (100%) compared to compliant, namely 4 workers (12.5%). The level of compliance with the use of PPE with workers' attitudes towards PPE that are positive is the most compliant, namely 28 workers (87.5%) compared to non-compliant, namely 0 workers (0.0%).

The results of the Multiple Logistic Regression analysis in Table 2 show a p value of 0.016, which is smaller than 0.05, so H1 is accepted. Indicating that attitude has a significant effect on the

level of compliance with the use of PPE in rehabilitation and maintenance construction workers at the Health Center in Tuban Regency . The results of this study are in line with research (Al-Bayati et al., 2023) on construction workers in the United States, showing that a proactive attitude is very important to eliminate or minimize hazards and improve overall construction site safety. According to (Roshidi et al., 2023) the cause of low compliance with PPE by most construction workers is the attitude of workers towards work procedures, workers often ignore PPE with the perspective that the use of PPE is not necessary for their safety, so workers wear PPE because of instructions from the site safety supervisor. An ineffective monitoring system makes workers violate the rules when there is no supervisor and causes low levels of compliance with the use of PPE is the language barrier between supervisors and workers (Hameed et al., 2021). Based on the results of this study, workers' positive attitudes towards compliance with the use of PPE include agreeing to control work risks by using PPE, compliance with the use of PPE as a form of worker responsibility in maintaining their own safety in the workplace.

Table 3 Influence Encouragement colleague Work with Compliance Level Use of PPE

Coworker Encouragement	Compliance Level Use of PPE				Total	
	Not obey		Obedient			
	f	%	f	%	f	%
Low	21	100	3	9.4	24	45.3
Tall	0	0.0	29	90.6	29	54.7
Total	21	100	32	100	53	100

p-value

0.038

Based on Table 3, it shows that the level of compliance with the use of PPE with low co-worker encouragement is the most non-compliant, namely 21 workers (100%) compared to compliant, namely 3 workers (9.4%). The level of compliance with the use of PPE with high co-worker encouragement is the most compliant, namely 29 workers (90.6%) compared to non-compliant, namely 0 workers (0.0%).

The results of the multiple logistic regression analysis in Table 3 show a p value = 0.038, which is smaller than 0.05 indicating that H1 is accepted, which means that there is an influence of co-worker encouragement on the level of compliance with the use of PPE among construction workers in rehabilitation and maintenance of health centers in Tuban Regency . The study (Karina et al., 2023) stated that there are several factors that have an influence on compliance with the use of PPE, including education, availability of PPE, knowledge, socialization of PPE use policies, encouragement from co-workers, and age. Encouragement or support from co-workers themselves in the form of being a good example or being constantly reminded, so that it can encourage workers to be more compliant in using PPE (Daniati & Fadilla, 2022).

Based on the results of this study, the influence of the work environment and coworkers can affect workers in carrying out work in the field, so good supervision, reward and punishment , and HSE inspection do not completely make workers obedient, but the presence of encouragement factors from coworkers will also have a positive influence on

workers in complying with the use of personal protective equipment.

Table 4 Influence of HSE *Inspection* with Compliance Level Use of PPE

HSE <i>Inspection</i>	Compliance Level Use of PPE				Total		
	Not obey		Obedient				
	f	%	f	%	f	%	
High Risk	20	95.2	0	0	20	37.7	
Risk Low	1	4.8	32	100	33	62.3	
Total	21	100	32	100	53	100	
<i>p-value</i>		0.031					

Based on Table 4, it shows that the level of compliance with the use of PPE with HSE *inspection* those with the highest risk of non-compliance, namely 20 workers (95.2%) compared to compliant workers, namely 0 workers (0.0%). The level of compliance with the use of PPE with HSE *inspection* Those at low risk were the most compliant, namely 32 workers (100%), compared to non-compliant, namely 1 worker (4.8%) .

The results of the multiple logistic regression analysis presented in Table 4 show a p value of 0.031, which is smaller than 0.05, so that the H1 hypothesis is accepted. Indicating that there is a significant influence between HSE inspections and the level of compliance with the use of personal protective equipment (PPE) in rehabilitation and maintenance construction workers at the Tuban Regency Health Center . This is in line with research(Iin et al., 2021) which concluded that the HSE inspection factor (p-value = 0.017) has a significant influence on compliance with the use of PPE. HSE inspection is a routine inspection in the workplace carried out by occupational health and safety implementers to prevent death, injury, or illness in the workplace (Widjaya &

Mahbubah, 2022).

Based on the results of this study, the purpose of HSE *inspection* is to reduce or even eliminate all risks to workers in the workplace, whether the assessment of compliance with the use of PPE is carried out to protect the welfare of workers by identifying hazard risks and encouraging company owners or management to fix the problem, and failure to do this can result in losses both from the aspect of workers and companies or organizations, even the surrounding community.

Table 5 Influence *Rewards and Punishments* with Compliance Level Use of PPE

<i>Rewards and Punishments</i>	Compliance Level Use of PPE				Total		
	Not obey		Obedient				
	f	%	f	%	f	%	
Not enough	21	100	7	9	8	8	
Good	0	0.0	25	1	5	2	
Total	21	100	32	100	53	100	
<i>p-value</i>		0.049					

Based on Table 5, it shows that the level of compliance with the use of PPE with *rewards and punishments* The least compliant were 21 workers (100%) compared to compliant workers, namely 7 workers (21.9%). The level of compliance with the use of PPE with *rewards and punishments* The most compliant were 25 workers (78.1%) compared to 0 workers (0.0%) who were not compliant .

The results of the inferential analysis in Table 5 using Multiple Logistic Regression show a p value= 0.049, which is less than 0.05, so H1 is accepted. Indicating the influence of rewards and punishments on the level of compliance

with the use of PPE among construction workers in rehabilitation and maintenance of Puskesmas in Tuban Regency. This is in line with research (Nur & Dwiantoro, 2022) that states that the implementation of the reward and punishment system is closely related to compliance with the use of PPE. Rewards that are used properly can create a sense of optimism, increased self-confidence, controlled self-control, valued self-esteem, and a sense of solidarity between workers, while punishment is a punishment or threat given to workers with the aim of improving worker behavior (Muafi & Situngkir, 2022).

Based on the results of this study, the implementation of the reward program and Punishment of workers who have bad behavior will race to achieve rewards and try to avoid punishment /sanctions, on the other hand, workers are less interested in the rewards that will be given, one of the reasons is because the form of reward and the time of giving it are too long, then the punishment given is not just to punish workers if they commit violations, but also as a control tool in the work environment so that workers can avoid unwanted incidents, the consequences of good punishment are soon-certain-negative in nature, with the hope that the punishment can be felt directly by workers who behave inappropriately with existing regulations.

Dominant Factors Influencing the Level of Compliance with the Use of Personal Protective Equipment

Research conducted at the Community Health Center Regency Tuban This using Logistic Regression test multiple with objective see factor dominant influential

to level compliance use of PPE for power Work construction rehabilitation and maintenance, where if one of the independent variable values has the largest OR or *Exp* (B) value, it indicates that the magnitude of the influence of the independent variable on the dependent is very strong or dominant. Likewise, if the smallest OR or *Exp* (B) value is obtained, it indicates that the value of the independent variable has a fairly weak influence on the dependent variable.

Table 6. Analysis Influence of Dominant Factors on Compliance Level Use of PPE

Variables Independent	<i>Exp</i> Value (B)	<i>P</i> Value
Knowledge	0.020	6,585
Attitude	0.016	14,423
Coworker Encouragement	0.038	0.117
HSE Inspection	0.031	0.056
Rewards and Punishments	0.049	0.127

The results of the multiple Logistic Regression analysis in Table 6 show that the attitude variable obtained the highest *Exp* (B) value (14.423) from other variables. It can be interpreted that attitude as a causal factor that most dominates its influence on the level of compliance in the use of PPE for construction workers, rehabilitation and maintenance of Health Centers in Tuban Regency. From the level of research risk, namely those who do not behave compliantly towards the use of PPE are 14.423 times greater against work accidents in construction workers, rehabilitation and maintenance of Health Centers in Tuban Regency. This is in line with research results (Sayuti et al., 2023) that attitude is an important factor in the level of worker compliance in using PPE.

The level of compliance with the use

of personal protective equipment in general can be influenced by several factors, including predisposing factors, namely knowledge, age, beliefs and values, work, attitudes, education, beliefs. According to (Inayah et al., 2023), companies must have a commitment attitude in accordance with Indonesian regulations, namely implementing SMK3, conducting regular health checks on workers, and providing medical care for sick workers to build a K3 culture and encourage positive and non-hazardous work habits.

Based on the research results, PPE is the last choice in the control hierarchy, because the proper and correct use of PPE depends on many factors, including the very important non-proactive attitude of workers who often show negligence and do not care about dangerous safety rules.

4. CONCLUSION

- a. There is influence between knowledge, attitude, motivation colleague work, HSE inspection, reward and punishment with level compliance use of PPE by workers construction rehabilitation and maintenance Health Centers in the District Tuban with *p-value* knowledge (0.020), attitude (0.016), motivation colleague work (0.038), HSE inspection (0.031), and reward and punishment (0.049).
- b. attitude as factor the most dominant cause its influence from level obedience in use of PPE for power Work construction rehabilitation and maintenance Health Centers in the District Tuban with mark *Exp* (B) is 14,423.

5. RECOMMENDATIONS

Suggestions for improvement provided is that each worker is more open to the concept of a true work safety culture in the workplace. Other factors that can be used by future research in an effort to increase the use of PPE include the availability of proper PPE and training in the use of PPE

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