

A Description of How Workers Perceive the Process of Implementing the Construction Safety Management in Construction Projects

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Abstract:- The number of work accidents in Indonesia is still high. Occupational Safety and Health Employment recorded the number of work accidents in Indonesia as many as 265,334 cases in 2022. (1) In order to overcome the high level of work accidents, the government requires the construction sector to implement the Construction Safety Management System. The successful implementation of safety management in the workplace is influenced by workers' perceptions of the implementation of safety management. This research is a qualitative approach with the main objective to describe the factors that shape workers' perceptions of the implementation of construction safety management. The phenomenological design used in this qualitative research aims to understand or explore the reality experienced or certain behaviors of individuals or groups of individuals as well as the aspects that underlie a feeling, opinion, event, relationship, The phenomenological design used in this qualitative research aims to understand or explore the reality experienced or certain behaviors of individuals or groups of individuals as well as the aspects that underlie a feeling, opinion, event, relationship, etc. (2) The results of this study are the factors that influence the formation of workers' perceptions include leadership in the implementation of construction safety management, workers' experience, project teamwork in building construction safety, awareness in implementing construction safety management, occupational safety and health counseling provided, and weak occupational safety and health authority in decision making that supports the implementation of construction safety management.

Keywords:- Construction Safety Management System, Perception, Work Accident.

I. INTRODUCTION

Social Security Organizing Agency Employment recorded the number of work accidents in Indonesia as many as 265,334 cases in 2022. This number increased by 13.26% from the previous year which amounted to 234,270 cases. (1) During January to November 2023 accident cases amounted to 121,532 cases. (3) This is an indication of the need to improve the way potential hazards are handled. It will require large accident compensation if it is not able to handle these potential hazards

properly. (4) Therefore, construction safety management is needed to handle these many work accidents. According to research from Annisa Aprilia published in the journal Construction engineering management, it is stated that Occupational Safety and Occupational Health simultaneously or together have an influence coefficient of 0.770 which means that they have a strong and significant or meaningful effect on work accidents. (5) Based on research conducted by Amalia fitriani on the effect of the application of Construction Safety Management System on risk control in structural work on bridges published in the construction and materials journal, it is explained that the effect of applying Construction Safety Management System elements on risk control in structural work on bridges with a coefficient of determination of 83.3%. This means that 83.3% of Construction Safety Management System elements affect risk control in bridge structural work. (6) From the above research, it shows that the implementation of safety management is very influential on risk control.

(5) Based on research conducted by Amalia fitriani on the effect of the application of Construction Safety Management System on risk control in bridge structure work published in the journal construction and materials, it is explained that the effect of the application of Construction Safety Management System elements on risk control in bridge structure work with a coefficient of determination of 83.3%. This means that 83.3% of Construction Safety Management System elements affect risk control in bridge structure work. (6) From the above research, it shows that the application of occupational safety management is very influential on risk control.

Workers' perceptions are shaped by knowledge, attitudes, and practices, as well as social support from superiors, such as guidance and supervision from superiors. Knowledge is the ability to know and describe information obtained from sight and hearing. The results of vision and the hearing are obtained, among others, through learning, information media, both printed and electronic and one's experience. Knowledge is the result of knowing, and this occurs after people perceive a certain object. The magnitude of the influence of Occupational Safety and Health knowledge on employee performance is 0.951 (95.1%). Based on research conducted by Cicilia lisnahan, it is explained that understanding occupational safety and health has a positive effect on employee performance to

work at PT. Usaha Karya Buana. (8) So it can be concluded that knowledge, attitudes, and practices, as well as social support have an influence in shaping workers' perceptions.

PT X has been established since 1978 has a business that operates as a leading company in the infrastructure and metal construction industry. PT.X has construction service products including passenger garbarata, steel bridges, steam power plants, transmission lines and oil and gas projects. With skilled and trained human resources, PT.X has contributed to the acceleration of national development by producing high quality products and services for strategic sectors, such as energy, transportation and communication. PT.X has obtained ISO 9001 certificate and a certificate from American Petroleum Institute (API) for oil and gas related activities in 1995. PT.X has obtained Quality Assurance & OHSAS certificates for the period 2000 - 2010, ISO 9001 certificate in 2015 on quality management, ISO 45001 in 2018 for Occupational Safety and Health Management System, and ISO 14001 in 2015 for Environmental Management System.

The Y bridge construction project that is being carried out by PT.X has been running since January 2022. In carrying out quality assurance and construction safety PT.X has a Quality Assurance (QA) & Occupational Safety and Health department to help implement quality and safety management. In the implementation of the Y bridge construction there is work in foundation excavation / excavation such as pile and bore pile foundation work, work at heights such as demolition and preparation of bridge segments, welding such as welding expansion joints, work related to electricity such as the use of electrical panels, generators, work related to chemicals such as casting using concrete pumps and truck mixers. This causes the Y bridge construction project to be included in the high risk category because it has a risk of fatality or death in its implementation.

Based on the initial review conducted by researchers, there are still workers who do not use personal protective equipment such as safety helmets, reflector vests and body harness in work at height. This includes unsafe behavior and violates Minister of Labor Regulation Number 9 of 2016 concerning occupational safety and health in work at height. In high-altitude work, for example, in the installation of pier head fixings that require workers to work at a height of more than 6 meters, lanyards and anchors have not been installed as a support for the body harness or what is called a fall arrest system. Researchers also found that in the work of using grinders, there were workers who did not use face shields / eye and face protection. This is an unsafe act and violates Minister of Labor Regulation Number 8 of 2010 concerning Personal Protective Equipment.

The description above shows that in the implementation of the application of the construction safety management system in this project there are still workers who do not use personal protective equipment and have not installed safety equipment at work at height, it can be concluded that the application of the construction safety management system has not been maximized. The success of the implementation of the construction management system that has not been maximized

is influenced by workers' perceptions of the implementation of safety management. Meanwhile, workers' perceptions themselves are formed by being influenced by various factors, but it is still unknown what factors influence. Therefore, it is necessary to conduct a study on the description of workers' perceptions of the implementation of construction safety management in construction projects so that the results of the analysis are expected to contribute in the form of constructive suggestions to find out what factors shape workers' perceptions because workers' perceptions affect the successful implementation of construction safety management in construction projects.

II. METHODS

This research is a qualitative approach with the main objective to describe the factors that shape workers' perceptions of the implementation of construction safety management. The phenomenological design used in this qualitative research aims to understand or explore the reality experienced or certain behaviors of individuals or groups of individuals as well as the aspects that underlie a feeling, opinion, event, relationship, and others. This design is often used in research on the philosophy of a particular behavior or event. (2)

In this study, the sample selection used is a non-probability sample (non probability sampling) type of purposive sampling or selective or objective assessment sampling. Qualitative research does not recognize the existence of a minimum sample size. Generally, qualitative research uses a small sample size. Even in certain cases using only 1 informant. There are at least two conditions that must be met in determining the number of informants, namely adequacy and suitability. (9)

The main informants in this qualitative research are contract workers totaling 5 people. The triangulation informants in the study were the Supervisor and occupational safety and health officers, totaling one person each. The supervisor is the project coordinator in charge of coordinating the work done by the contract workers. The supervisor will get a report from occupational safety and health regarding the plan and results of the occupational safety and health program implementation that has been carried out by occupational safety and health officers from occupational safety and health personnel directly. Occupational safety and health officers is the personnel authorized to coordinate the implementation of construction safety management. Occupational safety and health officers must ask permission from the Supervisor if it will use contract worker personnel or will carry out the occupational safety and health program. The supervisor and occupational safety and health selected as key informants and triangulated are personnel who have decades of experience in construction projects and have joined the project team since the beginning of the project.

A. Inclusion Criteria in the Selection of Research Subjects:

- Have worked in the construction project of PT. X for at least 3 months and have a minimum work experience of 3 years in construction projects
- Have worked at heights in construction projects.
- Willing to be interviewed
- The following are the inclusion criteria in the selection of informants in this study, among others:
- Has not worked on the PT.X construction project for at least 3 months and has a minimum work experience of 3 years in construction projects
- Never worked at heights in construction projects.
- Not willing to be interviewed

In this study, to obtain primary data through semi-direct interviews with informants. Researchers used a semi-structured interview method. Documentation of activities in the field and observations which then the results are recorded with a checklist sheet. To obtain secondary data through procedures owned by the project team.

Qualitative data collection techniques are basically tentative because their use is determined by the context of the problem and the description of the data to be obtained.⁽¹⁰⁾

Techniques used to ensure the accuracy and credibility of the research results through triangulation, member checking and auditing.

In carrying out observations in this qualitative research, the researcher acts as a full participant (complete participation) because the researcher enters totally into the group being observed, is involved, and experiences the same impression as the research subject. (11)

The research tools used include laptops, voice recorders, cameras, observation forms, cell phones, etc.

Qualitative methods are more appropriate to use the term "authenticity" than validity. Authenticity means providing a fair and honest description, account, and information. It must be guaranteed that the results obtained and their interpretation are correct. Interpretation must be based on information submitted by participants and not by the researcher himself. (12)

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There are several techniques used by qualitative methods to ensure the accuracy and credibility of research results, namely: triangulation, member checking and auditing. Data triangulation means using a variety of data, using more than one theory, several analysis techniques, and involving more researchers. (12)

Member checking means that the interview data is then confronted again with the participants or informants. Participants must read, correct or reinforce the summary of the interview results made by the researcher. (12)

While auditing shows the role of experts in strengthening the results of research. So auditing presupposes the involvement of outsiders in evaluating or confirming the research. What auditors usually ask is whether the results are truly natural and based on local conditions and situations (grounded); whether the conclusions are logical; whether the theme is appropriate; what strategies are used to really increase credibility. (12)

Informants are research subjects who can provide information about the phenomena/problems raised in the research. In qualitative research, informants are divided into three, namely:

- Key informants
- Main informant
- Supporting informants

Key informants are informants who have comprehensive information about the issues raised by researchers. Key informants not only know about the conditions/phenomena in the community at large, but also understand information about the main informants. The selection of key informants depends on the unit of analysis to be studied. For example, in an organizational unit, the key informant is the head of the organization. (9)

The main informant is a person who knows technically and in detail about the research problem to be studied. For example, in research on maternal behavior in utilizing Posyandu services as the main informant is the mother who has a toddler, while the key informant is the Posyandu cadre.

Supporting informants are people who can provide additional information to complement the analysis and discussion in qualitative research. Additional informants sometimes provide information that is not provided by the main informant or key informant.

The main informants in this qualitative research are 5 contract workers with the initials Mr. G, Mr. P, Mr. T, Mr. SW, and Mr. D. The main informants have many years of work experience in construction projects. This is because workers are the parties who directly receive the impact of the implementation of policies implemented by the company in carrying out construction safety management. As a source triangulation, the key informant in this research is the HSE while the supporting informant is the supervisor. The number of key informants and supporting informants each amounted to one person.

The supervisor was chosen as a supporting informant because the supervisor is the project coordinator in charge of coordinating the work done by contract workers so that he knows how the conditions of the workers and the policies of the company's management team in carrying out the fulfillment of

construction safety management requirements. Supervisor will get a report from Occupational safety and health officer regarding the plan and results of the occupational safety and health program implementation that has been carried out by occupational safety and health officer from occupational safety and health personnel directly.

Occupational safety and health officer was chosen as a key informant because occupational safety and health officer is a personnel who are given the authority to coordinate the implementation of construction safety management so that they know the conditions of workers and the policies of the company's management team in carrying out the fulfillment of construction safety management requirements. Occupational safety and health officer must ask permission from the Supervisor if it will use contract worker personnel or will implement the occupational safety and health officer program. The supervisor and occupational safety and health officer selected as supporting informants and key informants are personnel who have decades of experience in construction projects and have joined the project team since the beginning of the project.

To fulfill auditing / expert triangulation, the author in carrying out the preparation of this research was guided by Prof. Hanifa Maher Denny, MPH., Ph.D and Dr.,dr.Daru Lestantyo,M.Si., who were supervisors and Ibu Hj.Dr.Dra. Endah, M.Kes., who is a Psychology lecturer at the Faculty of Psychology, Diponegoro University as a qualitative research consultant. The three experts will guide researchers to ensure that the research strategy used increases credibility, the themes determined are suitable / appropriate, the research results are truly natural and based on local conditions and situations (grounded), have logical conclusions.

To fulfill member checking or time triangulation, the author will reconfirm to the informants regarding the answers given and in conducting interviews with informants, researchers will record with a voice recorder so that they can save the results of conversations during interviews.

To meet the criteria for researcher competence, the author has been given the mandate as occupational safety and health Coordinator at the main contractor in the East Java area for the X bridge construction project so that he knows the conditions of the informants, has experience compiling documents to fulfill construction project tenders in the field of occupational safety and health and has studied qualitative research methods both through lectures and discussions with competent supervisors.

The first problem is about whether the results of this qualitative research can be generalized or not? Of course the background of the question is related to the quantitative way of thinking where the results of a study can be generalized, if the methods and objects studied are the same. Answering this problem, researchers who use qualitative methods must really realize that the target of their research is a subject that is dynamic, moving and changing at any time. (12)

The dynamic aspect of the subject under study is one of the factors that confirm that the results of a qualitative research cannot be generalized because the pattern is specific, unique and changes every time. (12)

The second question concerns the researcher's subjectivity and bias towards the research results. It cannot be denied that the influence of the researcher's subjective greatly affects the results of the study. This is due to the fact that data submitted by participants is usually interpreted first by the researcher. It is the researcher who gives meaning to the participant's data. The data must first be understood by the researcher. That means that the researcher makes an interpretation of the data. The problem will become chronic if the researcher only records or observes things that the researcher himself finds interesting without seeing what actually happens. To avoid this, research using this method is usually made by a team of researchers. The results of field notes are also criticized by fellow researchers or other experts. It is impossible to eliminate the subjectivity of the researcher. What can be done is how to use these subjective influences in a proportional and accountable manner. It is undeniable that humans think with their bodies, humans understand with their bodies. Body and soul are inseparable, as expressed by Merleau Ponty about the unity of body and mind. (12)

To reduce the subjectivity of the researcher, there should be sufficient reading and journal sources as reference material. It is also important that the researcher spends enough time at the research site and gets information from more sources. Preliminary research is always recommended, so that the researcher has a good idea of the topic to be researched. The researcher should also realize that the research results should contribute to science and not just be a description of facts or reality. (12)

The third question is whether the presence of the researcher will affect the participants? There is no denying that the presence of the researcher will affect the attitude of the subject under study. But it must be kept in mind that the researcher must obtain data as naturally as possible. Indeed, if the researcher treats the participants as research subjects, then they will behave as research subjects. (12)

Another critical question is whether this method is truly scientific? The basis of this question is the objectivity of the research results. As stated earlier, the objectivity of the research results can only be guaranteed if what is studied is an object or treated as an object. Qualitative methods do not examine objects but subjects. Because the subject is dynamic, it is difficult to provide quantitative measurements. But it must be kept in mind that there is enough subjective wealth that can be researched, understood and approached scientifically. (12)

➤ *The Data Analysis Technique in this Research Uses Thematic Analysis. Steps in Carrying out Thematic Analysis:*

• *Phases 1*

Familiarize yourself with your data. Deep reading usually involves 'iterative reading' of the data, and reading the data actively looking for meaning, patterns and so on. It is ideal to read through the entire data set at least once before you start coding, as ideas and identification of possible patterns will take shape as you read.

• *Phases 2*

Initial codes are the result of identifying data features (semantic or latent content) that appear interesting to the analyst, and refer to 'segments, or the most basic elements, of the raw data or information that can be assessed in a meaningful way in relation to the phenomenon'.

• *Phases 3*

You begin to analyze your codes and consider how different codes can be combined to form an overarching theme. It may be useful at this phase to use visual representations to help you sort the different codes into themes.

• *Phases 4:*

You consider the validity of each theme in relation to the data set, but also whether your candidate thematic map 'accurately' reflects the meaning seen in the data set as a whole. To some extent, what counts as an 'accurate representation' depends on your theoretical and analytical approach. However, in this phase you are rereading your entire data set for two purposes. The first is, as already discussed, to ascertain whether the theme 'works' in relation to the data set. The second is to code any additional data within the theme that was missed in the previous coding stage.

• *Phases 5:*

At this point, you then define and further refine the themes that you will present for your analysis, and analyze the data within them. What we mean by 'defining and refining' is identifying the 'essence' of each theme (as well as the theme as a whole), and determining what aspects of the data are captured by each theme. It is important not to try to create too many themes, or too diverse and complex. The trick is to go back to the set of data extracts for each theme, and organize them into a coherent and internally consistent report, accompanied by a narrative. It is very important that you do not just paraphrase the content of the data extracts presented, but identify what is interesting about the data and why. For each theme, you will need to conduct and write a detailed analysis. As well as identifying the 'event' that each theme conveys, It is also important to consider how it fits into the wider overall 'event' you are telling about your data, in relation to the research question or questions, to ensure there is not too much overlap between themes. So it is important to consider the themes themselves, and each theme in relation to the other themes. As part of the refinement, you need to identify whether or not a theme contains sub themes. Sub themes are essentially themes within a theme. They can be useful for giving structure to very

large and complex themes, and also for showing the hierarchy of meaning in the data.

• *Phases 6:*

Produce a thematic analysis report. Your paper should provide sufficient evidence of the themes in the data, that is, extract enough data to show the prevalence of the theme. Choose very real examples, or quotes that capture the essence of the point you are making. (13)

B. Result

This research was carried out at the Y bridge construction project which acted as the main contractor was PT.X. This project is one of the national strategic projects. The Y bridge construction project that is being carried out by PT.X has been running since January 2022. The Y bridge construction project is one of a package of nine bridge construction projects. In this project is led by a project head (Contractor Manager). The Contractor Manager has a representative, namely the Site Operations Manager (Field Head) in coordinating the nine project packages. Each project has a Supervisor (implementer) whose job is to coordinate one project package. In carrying out construction management, each Supervisor is assisted by occupational safety and health officers, Quality assurance (QA), surveyors and logistics personnel. In carrying out quality assurance and construction safety PT.X has a Quality assurance & occupational safety and health department to help implement quality and safety management.

In the implementation of the Y bridge construction there is work in foundation excavation / excavation such as pile and bore pile foundation work, work at heights such as demolition and preparation of bridge segments, welding such as welding expansion joints, work related to electricity such as the use of electrical panels, generators, work related to chemicals such as casting using concrete pumps and truck mixers. The explanation of the coordination flow between the Supervisor, occupational safety and health officers is as follows: The key informant, namely the occupational safety and health Coordinator, believes that the party representing the project head in this project is the Site Operations Manager (SOM) or field head. In each project, personnel are placed including Site Operations Manager (SOM), Supervisor, and occupational safety and health officer. These three personnel in carrying out their respective roles must coordinate with each other. Based on interviews with supporting informants, namely the Supervisor, it is stated that the Supervisor knows that his direct superior is the head of the field (Site Operational Manager / SOM). The informant knows the position of each member of his team. The informant knows who the occupational safety and health personnel are in his project. Each department will report to the Supervisor regarding the work that has been done and the material and labor needs they need in carrying out their respective job desks. Supervisor knows who the occupational safety and health personnel are in the project. Each department will report to the Supervisor regarding the work that has been done and the material and labor needs they need in carrying out their respective tasks. The supervisor believes that there is no confusion regarding the task of the PT.X project team members. According to the Supervisor, personnel who act as Surveyors will coordinate with the Supervisor regarding dimensions,

personnel who act as logistics also coordinate with the Supervisor. Occupational safety and health also coordinates with the Supervisor. From the Supervisor's statement, it can be concluded that the Supervisor is a representative of the head of the field who is the party coordinating the implementation of management in the project, therefore every coordinator from the occupational safety and health officers, logistics, and

Surveyor sections will provide reports to the Supervisor. From the results of interviews with the Occupational safety and health Coordinator and Supervisor, it can be concluded that the explanation related to the organizational structure mentioned by the Occupational safety and health Coordinator is the same as that explained by the Supervisor.

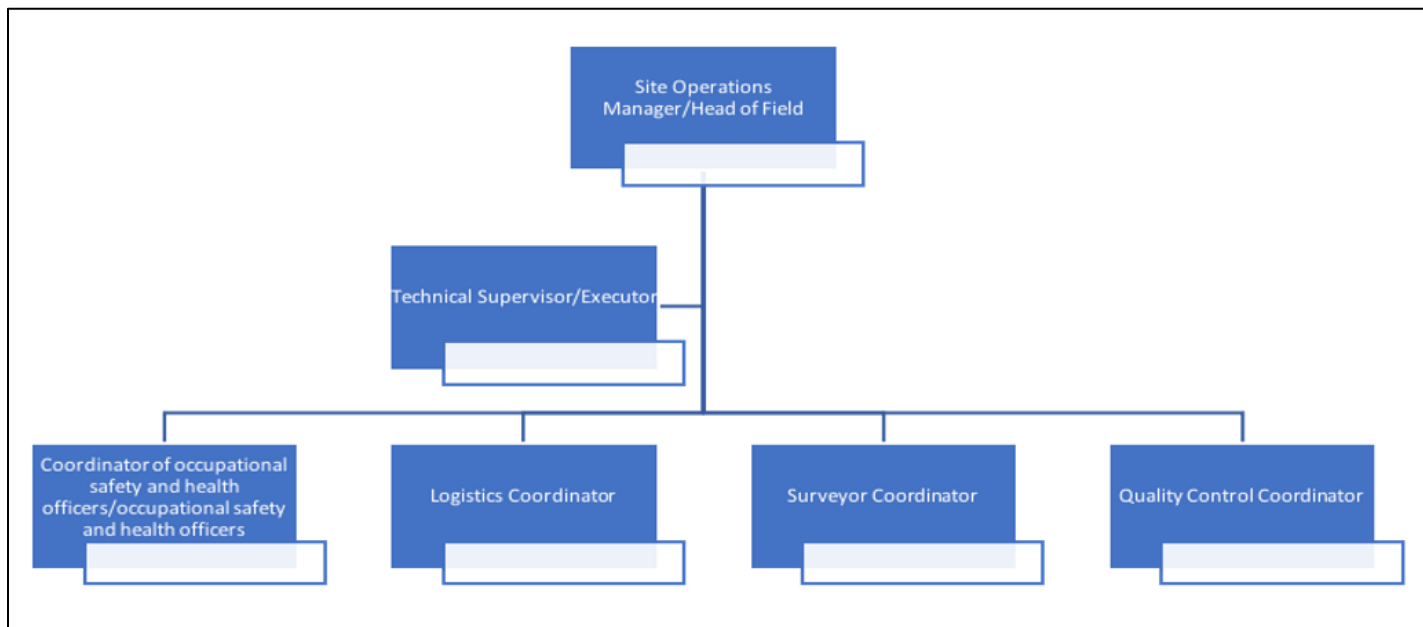


Fig 1: Project Organizational Structure

C. Data Processing Results

Based on interviews with informants that have been carried out thematic analysis at the categorization stage, there are 14 categories.

Table 1: Categorization

No	Categorization	Initial Code	Code Number	Total
1	Assertiveness of occupational safety and health officers in implementing construction safety.	The Occupational safety and health officer's job description according to key informants is to monitor the Occupational safety and health conditions of all personnel in the project and the surrounding environment.	I1.	1
		Occupational safety and health officer in carrying out its role must be active in coordinating and communicating.	I4	1
		The occupational safety and health officer is responsible for coordinating the emergency assistance that must be given to workers who have suffered workplace accidents.	I5.	1
		Construction safety is a shared responsibility, and requires everyone's awareness to carry it out.	I32, I63.	2
		Inadequate implementation of health services in the project.	Y62.	1
		Workers know that occupational safety and health authorities should be responsive to job risks and provide complete Personal Protective Equipment (PPE).	T6	1
2	Reduction in the authority of occupational safety and health officers in the field (under the supervisor).	Occupational safety and health officers cannot give work instructions directly to workers.	Y49.	1
		Workers are more obedient to work instructions given by the Supervisor.	Y 494	1
		Occupational safety and health officers do not make decisions on potential hazard control measures in the field.	I37 I73 I78.	2

		Reduced authority of occupational safety and health officers in the field.	I11, I21	1
3	Build personal and organizational awareness of construction safety.	Construction safety is a shared responsibility, and requires everyone's awareness to carry it out.	I63	1
		There are still many workers who are accustomed to not using Personal Protective Equipment (PPE) when working.	I33 3.	1
		The cause of work accidents is unsafe behavior or human error.	I34.	1
		Occupational safety and health officers find it difficult to realize compliance with the use of Personal Protective Equipment (PPE) in the project.	I33.	1
		Assertiveness from occupational safety and health officers to remind is needed.	P26.	1
		There is no awareness of the importance of using Personal Protective Equipment (PPE).	D7.	1
4	There is no awareness of the importance of using Personal Protective Equipment (PPE).	Construction education facilities conducted by occupational safety and health officers.	I55	1
		Toolbox Meeting (TBM) is a means of providing construction safety appeals and daily work program briefings.	I57	1
		Limited number of occupational safety and health officer so that occupational safety and health officers cannot supervise every area of the project.	I88	1
		The lack of effective supervision applied by occupational safety and health officers so that they cannot supervise every area of the project.	I89, I105.	2
		Occupational safety and health officers feel that they need input from various parties regarding conditions in the field.	I76.	1
		Occupational safety and health officers feel unable to monitor potential hazards that occur in the field.	I77.	1
		Control efforts have been implemented but human error is still a risk factor that cannot be eliminated.	I99.	1
		Habituation to use personal protective equipment (PPE) in the project carried out by occupational safety and health officers.	G1	1
		Workers feel that they have been reminded occupational safety and health officers to use Personal Protective Equipment (PPE) on the project many times.	G 111.	1
		Information from the Toolbox Meeting (TBM) becomes the basis of work for workers, especially caution and the use of PPE (Personal Protective Equipment).	G23.	1
		Workers feel that they often receive safety education through the Toolbox Meeting (TBM).	P49.	1
		Workers understand the priority of safety at work, how to work and what kind of security in the field to be safe as Toolbox Meeting (TBM) counseling material.	P54	1
		Occupational safety and health counseling has not been effective in building awareness of the importance of construction safety.	D6, P49	2
		There is no awareness of the importance of using Personal Protective Equipment (PPE).	D7	1
		The effectiveness of supervision to ingrain awareness of occupational safety and health risks is still not maximized.	D22	1
		Occupational safety and health officers have provided construction safety counseling.	D23	1

		Occupational safety and health officers have conducted supervision to maintain compliance with the use of Personal Protective Equipment (PPE).	D25	1
		Workers are aware of the risks of not safely wearing Personal Protective Equipment (PPE) through habituation and supervision by the Occupational Safety and Health Officer.	SW 19	1
5	Supervisor's strategy for construction safety.	Supervisors give warnings to workers to work with safety in mind.	P28.	1
		The coordination process carried out by the Project Head, Site Operations Manager, Supervisors, surveyors, heavy equipment operators facilitates the implementation of work in the field.	Y2	1
		Supervisors assume workers instinctively have a concern for their own safety and the environment.	Y12.	1
		Supervisors will take seriously any worker/ employee who reports an unsafe condition or unsafe behavior.	Y21.	1
		Supervisors support the implementation of construction safety counseling/safety campaign	Y46.	1
		Repeated reminders that safety must be prioritized before working were emphasized by the Supervisor.	Y11.	1
		Supervisors have made efforts to control potential landslide hazards in the area.	Y8	1
		Supervisors have made efforts to control potential landslide hazards in the area.	Y13	1
		With his experience, the Supervisor applies appropriate control methods to potential hazards.	Y 131	1
		The implementation of housekeeping is not supported by an adequate number of personnel.	Y4.	1
		The implementation of housekeeping assignments is still not in accordance with procedures.	Y9,Y44.	2
		There is a difference in perception on who is obligated to do housekeeping.	Y5.	1
		Housekeeping obligations are perceived as voluntary rather than obligatory when they are actually risky if not done.	Y55.	1
		Supervisors have coordinated with vendors/mandors (in charge of housekeeping).	Y6.	1
		Supervisors have coordinated efforts to prevent loss of materials/work accidents by coordinating workers to carry out housekeeping.	Y8.	1
		Supervisor emphasized the importance of housekeeping to the foreman.	Y10.	1
		Lack of supervision of the Supervisor of the implementation of the construction safety program.	Y28.	1
6	Diverse worker participation strengthens construction safety implementation.	Occupational safety and health officers need input from various parties regarding conditions in the field.	I76.	1
		Worker participation is required to review existing work instructions or procedures.	I 130	1
		Worker experience underpins the correction of sign deficiencies.	G25	1
		Workers' experience is useful for providing appropriate suggestions and corrections for Operational implementation.	G20.	1
		Construction safety requires active participation of workers to use Personal Protective Equipment (PPE).	P21	1
		Workers do not feel involved in resolving safety and health issues on the project.	T9, T22.	2

		Lack of access by supervisors and occupational safety and health officers to encourage worker participation.	T2221, T23	2
		Workers realize the importance of participation in construction safety implementation.	T15.	1
		Workers' willingness to report occupational safety and health risks indicates low worker participation in construction safety.	SW24	1
		Workers' participation is limited to instructions given by superiors.	D8	1
		Low awareness of workers in participating in implementing construction safety.	D1413	1
		Supervisors will take seriously any worker/employee who reports an unsafe condition or unsafe behavior.	Y21.	1
		Supervisors will mingle with and embrace workers to facilitate coordination.	Y55	1
7	The role of top management in building construction safety.	The person in charge of construction safety from top management to the lowest level.	I80.	1
		Direct supervision from top management.	I84	1
		Monitoring by management leaders shows concern for construction safety.	Y24	
		Lack of resources in carrying out construction safety is a potential hazard for the implementation of construction safety on the project.	Y44.	1
		Conflict of interest between prioritizing construction safety and project progress.	I848, Y50	1
		There is a resource planning from project management to fulfil construction safety needs.	I132	1
		The company is located near a location that sells project equipment.	SW15	1
8	The effectiveness of the occupational safety and health officer function in the organizational structure is not optimal.	Occupational safety and health officers are not the decision-makers for potential hazard control measures in the field.	I37,I73,I78	3
		The person in charge of construction safety from top management to the lowest level.	I80.	1
		Conflict of interest between prioritizing construction safety and project progress.	I848	1
		Decision-making is not in line with the risks involved.	I86	1
		Occupational safety and health officers in carrying out their duties must first report/permit to the Supervisor.	Y3.	1
		Workers are more obedient to work instructions given by the Supervisor.	Y494.	1
		Occupational safety and health officers cannot give work instructions directly to workers. (Organizational structure).	Y49.	1
9	Occupational health and safety officers and supervisors jointly establish construction safety regulations on site.	Decision-making is not in line with the risks involved.	I86	1
		Supervisors support the implementation of the work stopping policy.	Y17.	1
		Supervisors support the implementation of prioritizing the safe use of heavy equipment in erection work.	Y18.	1
		Supervisors will take seriously any worker/employee who reports an unsafe condition or unsafe behavior.	Y21.	1
		Effectiveness of the construction safety system.	G2,G3	2
		The internet network is functioning effectively.	G4.	1
		Easy access to photocopying/printing services.	G5.	1
		Control of rainwater inundating the project has not been effective.	G10.	1
		Control of work equipment is not maximized.	G11.	1

		The availability of technical tools in the project is adequate.	G12.	2
		Occupational health and safety issues on site are communicated and coordinated by the piling Supervisor.	G17	1
		Work equipment is provided by the company according to the needs of the field.	G24	1
		The company has provided protection at the project so that it is safe from loss of goods and illegal levies.	D11	1
10	Inadequate worker knowledge of occupational safety risks.	Workers understand that in working, safety must be prioritized so that they can return home safely.	P13	1
		Workers understand that vigilance in work is required.	P27.	1
		Limited knowledge of workers regarding potential hazards in the project.	P84	1
		Workers consider construction safety to be the use of Personal Protective Equipment (PPE).	T4.	1
		Workers are aware of the risks of working while sick.	T5.	1
		Workers are aware of the risks of unsafe wearing of Personal Protective Equipment (PPE) through habituation and supervision by the Occupational Safety and Health Officer.	SW19	1
		Workers understand the risks of not using safety shoes as personal protective equipment (PPE).	T18.	1
		Workers understand the benefits of using vests as personal protective equipment (PPE).	T19.	1
		Workers understand the benefits of using safety helmets as personal protective equipment (PPE).	T20.	1
		Workers understand the meaning of personal protective equipment (PPE) for themselves.	T21.	1
		Workers are aware of the personal protective equipment that must be worn during welding work, namely welding masks and welding gloves.	G28	1
		Workers are aware of the personal protective equipment that must be worn on the project including helmets, vests, booth shoes / safety shoes.	G27.	1
11	Workers' tolerance for occupational safety and health risks is still high.	Decision-making on controlling occupational safety and health issues is determined by the magnitude of the hazard risk.	G19	1
		Workers think that the potential hazards of the project are low.	P89	1
		There is no awareness of the importance of using personal protective equipment (PPE).	D7	1
		Workers realize the impact of work accidents that will harm their families.	D18	1
		Workers are willing to comply with regulations on the use of Personal Protective Equipment (PPE).	D19	1
		Workers are willing to install protective equipment when instructed to do so.	D21	1
		Workers do not understand the potential hazards in the workplace so they do not have awareness in implementing construction safety.	SW21	1
		Workers realize the importance of maintaining a regular diet, sleep pattern and work pattern.	T8.	1
		Workers do not feel involved in resolving occupational safety and health issues on the project.	T9,T22.	2
		Workers have an awareness of the importance of using Personal Protective Equipment (PPE).	T7.	1
		Workers are willing to comply with regulations on the use of Personal Protective Equipment (PPE).	T71.	1
		Workers realize the impact of work accidents that will harm their families.	T16.	1

		Workers are willing to comply with the regulations for the use of Personal Protective Equipment (PPE).	T17.	1
12	Worker reports of unsafe situations reduce occupational safety and health risks.	Workers' experience is useful for providing appropriate suggestions and corrections for operational implementation.	G20.	1
		Experience Workers can demonstrate occupational safety and health risks in the field.	G21.	1
13	Hazard risk control requires complete Personal Protective Equipment (PPE) for workers.	Provision of Personal Protective Equipment (PPE) to workers tailored to the hazard risk.	G24.	1
		Personal Protective Equipment (PPE) that has been provided to workers.	P80	1
14	Cooperation between supervisors and occupational safety and health officers requires occupational safety and health training for workers.	Occupational safety and health training plan is not in accordance with project needs.	I98	1
		The risk of harm will arise as a result of incomplete occupational safety and health training provided to workers.	I989	1
		Lack of supervision of the Supervisor of the implementation of the construction safety program.	Y28	1

Based on interviews with informants that have been analyzed at the categorization stage, five main themes were obtained.

Table 2: Determination of Theme

No	Categorization	Initial Code	Code Number	Total
1	Workers' knowledge of the implementation of construction safety management.	Workers' knowledge related to the importance of construction safety in overcoming potential hazards on the project.	G28,P13,P27,P84, T4,T5, SW19,T18,T19,T20, T21.	10
2	Awareness to implement construction safety management.	Workers' attitudes regarding the importance of construction safety in addressing potential hazards on the project. Workers' responses regarding the importance of worker participation in the implementation of construction safety. Workers' attitudes in using the Work Protective Equipment that must be installed on the project.	G19,P89, D7,D18, D19,D21, SW21,T8, T9,T22,T7, T71,T16,T17,G20, G21.	16
3	Project teamwork in building compliance with construction safety management implementation.	Supervision carried out by occupational safety and health officers on workers in building compliance using Personal Protective Equipment (PPE). Efforts of occupational safety and health officers and Supervisors in carrying out security at work in the project area.	I55,I57,I88, I89,I105,I76,I77,I99,G1,G111,G23,P49, P5,D6, P49, D7,D22, D23, D25, SW19.	20
4	Leadership in the implementation of construction safety management.	The role of top management in building construction safety. The assertiveness of occupational safety and health officers in implementing construction safety. Personal protective equipment (PPE) provided to workers. Personal protective equipment (PPE) provided to workers. Efforts of occupational safety and health officers and Supervisors in providing occupational safety and health training for workers.	I80,I84, Y24, Y44, I848,I 132, SW 15,P80	7
5	Weakening the authority of occupational safety and health officers in making decisions that support the implementation of construction safety management.	The position of occupational safety and health officers in the organizational structure. The authority of occupational safety and health officers in the organization is under the Supervisor.	I37,I73,I78,I80,I848, I86,Y3, Y494,Y49, I11, I21.	11

➤ The following are the Results of Field Observations:

Table 3: Field Observation Results

No	Variable	Component	Documentation	Yes	No
					
1	Attitudes and practices of workers in fulfilling worker requirements	Workers wear safety helmets, reflector vests, boot shoes/safety shoes. For work at heights workers use full body harness.		√	
					
			Figure 1.0 Workers are wearing safety helmets, reflector vests, boat shoes/safety shoes.		

		Workers use full body harness when working at heights Work at height is work done at a height of 1.8 meters or more. There is an anchor provided as a support for body harness in work at height.	Figure 2.0 Workers do not use full body harness when working at heights. Work at height, namely pedestal casting work and the absence of an anchor provided as a place for body harness support.		√
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2	Installation of protective equipment and occupational health and safety signs in the field	Security has been carried out on ongoing work in the form of installing railings, anchors as a support for body harness lighting, safety lines, safety and health signs.	Figure 3.0 The absence of railings in the Pierhead casting work and the absence of anchors provided as a support for the harness body while there are occupational safety and health officers who supervise.		√
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3	Installation of protective equipment and occupational health and safety signs in the field	There are documents related to socialization, education, consultation and worker participation such as safety induction documents.	Figure 6. Activity documentation Toolbox meeting.	√	
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➤ Here is the Safety Induction Procedure of PT.X:

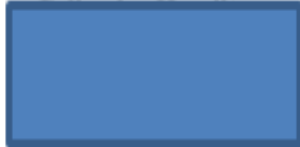


GENERAL PROJECT RULES

1. Every employee/worker must attend safety induction from safety.
2. Every new employee who will take safety induction must bring:
 - Health certificate
 - Vaccine 2
3. Every employee / worker who is in the project area must use the ID CARD provided
4. Supervisors must report the number of manpower working on writing to safety every morning.
5. All employees / workers must attend the toll box meeting (TBM) every morning
6. All workers are required to do housekeeping / cleaning in their respective areas 10 minutes before and after doing work.
7. All workers must perform housekeeping/cleaning in their respective areas 10 minutes before and after work.
8. No alcohol or drugs are allowed in the project environment.
9. All workers are prohibited from carrying sharp weapons / firearms in the project area
10. Minors are prohibited from being employed in the project area
11. Employees or workers are prohibited from defecating in any place.
12. Every hot work (HOT WORK) must use a permit (work permit)
13. All employees are not allowed to sleep or rest or smoke in the project area, except in places that have been provided.
14. All employees who work at heights above 1.8 M must use a body harness, according to safety standards.
15. All employees or workers are prohibited from removing goods or materials without the permission of the leader or the main contractor and must be known by the security.
16. Supervisors or foremen must report in writing if there is an accident (ACCIDERT) to safety 2x24 hours.
17. All employees are prohibited from making noise or damage in the project.
18. Every employee who enters the project area must use PPE
19. For each supervisor or foreman, if there is work in a confined space (confined space) must be coordinated in advance with the Safety Coordinator

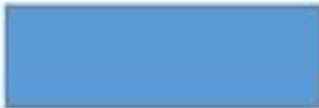
Thus the above regulations are made to be implemented, if there are employees or workers who violate it will be subject to sanctions up to termination of employment.

Cileungsi, 24 Mei 2022



HSE MANAGER

Fig 2: PT.X Safety Induction Document Part One



CH-HSE-001/F-007

STATEMENT LETTER

I, the undersigned

Name:

Position:

ID card number:

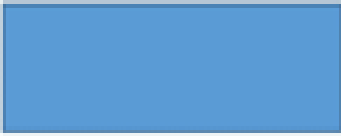
Will fulfill the regulations stipulated as follows:

1. Be present on time every working day Monday-Saturday 07.00-18.00 WIB.
2. Description: Enter: 06.45 A.M
Break: 12:00 P.M
Go home: 18.00 P.M
3. Arrive 10 minutes before working hours start (06.45)
4. Clean and tidy up tools / work 10 minutes before work is finished
5. Using safety equipment in the project area
6. Smoking is prohibited in the project area, except in designated places.
7. Bringing food in the project area is prohibited, except in designated areas.
8. Do not cause riots and commotion in the project area
9. Not leaving work without the permission of the project head
10. Willing to be penalized according to project operational procedures
11. Willing to be dismissed if you make a mistake

Thus, this statement letter is signed truthfully.

Known by	Sincerely,
 SHE INSPECTOR	 STAFF/WORKER

Fig 3: PT.X Safety Induction Document Part Two



CH-HSE-001/F-007

WORK SAFETY AGREEMENT LETTER

1. Name :
2. Position :
3. Id No. :
4. Supervisor :
5. Department :
6. Date :

On this day I have attended and received a briefing on company regulations, work safety regulations and health regulations at PT.BUKAKA TEKNIK UTAMA (Callender Hamilton Project) I realize that this briefing is very important, therefore I promise to comply with all safety and health briefings. I will always use safety equipment loaned by the company while working and in the project area, I am also willing to participate in every Tool Box Meeting (TBM) activity, no smoking in the work area, which is held for the benefit of the company and employees.

If in the future, I am found not following / violating work safety regulations, then I am willing to be expelled from the company and I will not demand anything from the company and or if I lose one of the PPE loaned by the company, I must immediately report to the SHE Inspector, and I declare that I am willing to replace the lost equipment according to its price.

If I see actions that are dangerous for myself or my coworkers, then I am obliged to take corrective and or preventive actions so as not to endanger and cause accidents for myself or my coworkers.

Thus, I have read and fully understood this work agreement letter and I sign it without any coercion from any party.

Checked,	Who Makes the Agreement
SHE INSPECTOR	STAFF / WORKERS

Fig 4: PT.X Safety Induction Document Part Three

III. RESULT

A. Factors Affecting the Formation of Workers' Perceptions of the Implementation of Construction Safety Management.

The following is an explanation of the factors that influence the formation of workers' perceptions of the implementation of construction safety management based on the results of interviews with key informants:

➤ Workers' Experience While Working

Table 4: Number of Initial Codes that Appear in the Main Informant Verbatim Regarding Workers' Experiences During Work

No	Theme	Code Number	Total
1	Worker experience is useful for providing appropriate suggestions and corrections for operational implementation.	G20	1
2	Worker experience can point out the occupational safety and health risks in the field.	G21	1
3	Workers' knowledge of occupational safety and health risks is refined through experience.	G22	1
4	Workers' experience underpins the provision of corrections to sign deficiencies.	G25	1
5	Workers understand the use of Personal Protective Equipment (PPE).	G281	1

Mr. G is a piling supervisor from a subcontractor who has many years of experience in construction projects and is one of the main informants in this research. The following is an excerpt from an interview with Mr. G, "In accordance with the Toolbox Meeting (TBM) instructions, you can remember, for example, when driving, be careful when working at heights, people who work at heights are told to use body hardness, regarding work safety and health, safety working at heights too. "It's pretty good that we have completed the complete Personal Protective Equipment (PPE) for work on this project." From the quote, information was obtained that the informant, through a toolbox meeting (TBM), received occupational safety and health education material related to the mandatory use of Personal Protective Equipment (PPE), Such as using body hardness when working at heights, whereas in the initial coding results from the interview, the informant knew about safety risks. And occupational health in piling work, providing corrections to deficiencies in signs, providing corrections for the operational

implementation of piling work, and understanding the use of Personal Protective Equipment. So it can be concluded that the informant was able to provide suggestions and corrections to the implementation of construction safety management not because he had followed the occupational safety and health education from the project but from the work experience that the informant had. So this proves that one of the factors that play a role in forming workers' perceptions of the implementation of construction safety management is workers' experience. This is in accordance with research from Grentina showing that work period greatly influences a person's experience of work and the environment in which he works, the longer he works the more experience he has. This will influence perceptions, attitudes, and work that is more controlled. Workers who have a long service life will be more skilled and experienced in carrying out their work so that the results will be better and safer.⁽¹⁴⁾

B. Exposure to Occupational Safety and Health Education Materials

Table 5: Number of Initial Codings Appearing in Verbatim of Main Informants Regarding Occupational Safety and Health Education

No	Theme	Code Number	Total
1	Information from Toolbox Meetings (TBM) forms the basis for working for workers, especially in terms of caution and the use of Personal Protective Equipment (PPE).	G20	1
2	The ineffectiveness of occupational safety and health training in building awareness of the importance of construction safety.	G21	1
3	Workers understand the prioritization of safety at work, work methods, and field safety measures as the material for Toolbox Meeting (TBM) training.	G22	1
4	The ineffectiveness of occupational safety and health training in building awareness of the importance of construction safety.	G25	1
5	Workers understand the use of Personal Protective Equipment (PPE).	G281	1

The following is an excerpt from an interview with Mr. G, "In my opinion, it's quite detailed, sir, every toolbox meeting (TBM) before starting work is told what Personal Protective Equipment (PPE) must be worn. "In accordance with the TBM instructions, you can remember, for example, when carrying out work, be careful, people who work at heights are told to use body hardness, regarding work safety and health, safety working at heights too. "We have met quite a lot of personal protective equipment (PPE) for work on this project." From the quotation obtained, information was obtained that the informant

through the toolbox meeting (TBM) received occupational safety and health education material related to the mandatory use of Personal Protective Equipment (PPE) such as using body violence when working at heights.

This shows that through the informant's occupational safety and health education obtain additional information regarding the requirements for providing construction safety management in the form of types of Personal Protective Equipment (PPE) that must be used. So this proves that one of

the factors that play a role in forming workers' perceptions of the implementation of construction safety management is an occupational safety and health education. This is in accordance with research on the influence of health education on changes

in people's knowledge and attitudes towards people with mental disorders from Uswatun Hasanah showing that health education can increase people's knowledge and attitudes towards patients with mental disorders. ⁽¹⁵⁾

C. Project Team Collaboration in Building Compliance with Construction Safety Management.

Table 6: Number of Initial Codings Appearing in Verbatim of Main Informants Regarding Project Team Collaboration in Building Compliance with Construction Safety Management Implementation.

No	Theme	Code Number	Total
1	Supervision is carried out by occupational safety and health officers on workers in establishing compliance with the use of Personal Protective Equipment (PPE).	I55,I57, I88,I89, I105,I76,I77,I99,Y17,Y18 ,Y21,G1,G111,G10,G17, G23,P26, P49, P84, D6, D22 D23,D25, SW19.	20
2	Supervision is carried out by occupational safety and health officers on workers in establishing compliance with the use of Personal Protective Equipment (PPE).		
3	Firmness of occupational safety and health officers in implementing construction safety		

Mr. SW is a worker on the PT. The following is an excerpt from an interview with Mr. SW, "For example, if I am not wearing Personal Protective Equipment (PPE) and then I am reprimanded, I usually immediately wear Personal Protective Equipment (PPE), a helmet to protect my head, a vest so I know there are workers, shoes to keep my feet safe. Sir, so it doesn't get scratched, sir. " From the quotation, information was obtained that the informant was aware of the unsafe risks of wearing Personal Protective Equipment (PPE) through familiarization and supervision of occupational safety and health officers. So this proves that one of the factors that play a role in forming workers' perceptions of the implementation of construction safety management is supervision of occupational safety and health officers.

Mr. P is a worker on the PT. The following is an excerpt from an interview with Mr. P, "It's like reminding each other that if there are other workers who neglect to wear Personal Protective Equipment (PPE), please remind them like that. If there is no potential danger, we just have to be careful, that's number one. It's like this, before we start working, we check the location first, whether there's something dangerous or not. You don't want everyone to get hurt, right? If there is a possibility of danger, it is landslides. The car isn't strong,... the ground isn't strong, landslides. That's the only danger, sir. From the interview excerpt, information was obtained that the informant had limited knowledge regarding potential dangers in the project, although he stated that the informant often attended work safety education through the Toolbox Meeting (TBM). This proves that the Toolbox Meeting (TBM) efforts carried out have not been effective in building awareness of the importance of construction safety because awareness of the risk of danger in the workplace has not been formed and the HSE is still less firm in building discipline in using Personal Protective Equipment (PPE) because there are still many workers who do not use Personal Protective Equipment (PPE) even though Personal Protective Equipment (PPE) has been provided.

The following is an excerpt from an interview with Mr. Y who plays the role of Supervisor who is a supporting informant, "Yes, it actually has to work, for example, when we were casting using the person's back, I told them to stop, which is what they were supposed to do. What you see as occupational safety and health, it's just what should be done, shouldn't be done, it's not a reasonable thing to do. If it could cause a fatality, then the job must be stopped. This means they care about their work. What we have to respond to warmly, we can't, we can't possibly get angry. Yes, if it's wrong, let's say it endangers construction safety, then we have to pay attention to it. " From the interview excerpt, information was obtained that the informant had an attitude that supported stopping work if it did not meet construction safety requirements. Based on field observations, the researcher witnessed the backwall (part of the bridge structure) casting work directly, the informant immediately stopped the worker who was casting using the worker's back and told the worker to prepare scaffolding to support the cast gutter. Through the leadership shown by the informant, workers will be informed that they are not allowed to use people's backs in casting and must use scaffolding to support the cast gutters. So this has the potential to become one of the factors that shape workers' perceptions of construction safety. So this caused the Pierhead (part of the bridge structure) to be cast without a safety fence and anchors. Based on field observations carried out by researchers, at the location of the work area where the pier head reinforcement was installed where the scaffolding was installed, anchors were not installed to support the body hardness and railings as a safety fence at the edge of the platform/temporary work floor.

The obligation to stop work if the construction safety requirements have not been met is contained in the Minister of Public Works, Public Housing Regulation number 10 of 2021 concerning construction safety guidelines in the attachment section in the building reliability control section, it is stated that if during the implementation of construction work something is found that endangers any personnel, the called for a stop to work. ⁽¹⁶⁾

Table 7: Number of Initial Codings Appearing in Verbatim of Main Informants, Key Informants, and Supporting Informants Regarding Leadership in the Implementation of Construction Safety Management

No	Theme	Code Number	Total
1	The role of top management in building construction safety.	I80,I84,I98,I989,Y4, Y5,Y55.	20
2	Barriers to building compliance with the use of Personal Protective Equipment (PPE).	Y24,Y28 Y44, I848,I132,SW15,P80,T22,SW21	
3	Personal Protective Equipment (PPE) provided to workers		
4	Occupational safety and health efforts and Supervisors in providing occupational safety and health training for workers.		

Mr. P is a worker on the PT. The following is an excerpt from an interview with Mr. P, "If that is already included in the national standard, that can be said, because starting with Personal Protective Equipment (PPE), starting from shoes, vests, and helmets is adequate." Mr T is a worker on the PT.X bridge project who has many years of experience in construction projects. The following is an excerpt from an interview with Mr. T when he was preparing for the pierhead casting work, "The thing is, every project has personal protection, in the previous project it was the same, they also wore personal protection, helmets. If we climb up, use body hardness. "We've never been given glasses, except when we work for foreigners in Cilegon, they're given them. Gloves were given." From the interview excerpt, information was obtained that according to the workers on the project, sufficient Personal Protective Equipment (PPE) was provided in the form of helmets, vests, boots/safety shoes, cotton gloves and body hardness. Even though there should still be Personal Protective Equipment (PPE) to be provided, this proves that the Personal Protective Equipment (PPE) provided will have the potential to shape the Informant's perception regarding the completeness of the Personal Protective Equipment (PPE) that must be provided in the project. When researchers carried out field observations, they received a welding mask and a pair of welding gloves. From the interview excerpt above, it can be concluded that the Personal Protective Equipment (PPE) that has not been provided by the foreman or the project team for casting work is safety glasses/spectacles and rubber gloves/chemical gloves because using cotton-resistant gloves is not waterproof.

Referring to Minister of Manpower Regulation number 8 of 2010 concerning Personal Protective Equipment (PPE) in article 4 paragraph 1, it is stated that Personal Protective Equipment (PPE) must be used in workplaces where explosive materials or goods are made, processed, used, traded, transported or stored., flammable, corrosive, toxic, infectious, high temperature or low temperature. In the attachment section to the law, it is explained that the types of eye and face protective equipment consist of safety glasses (spectacles), goggles, face shields, masks, face shields and safety glasses in one unit (full face mask). Types of hand protection consist of gloves made of metal, leather, canvas, cloth or coated fabric, rubber, and chemical-resistant gloves. (17) So use safety glasses (safety glasses / spectacles) and rubber gloves / chemical gloves comply with these regulations.

Mr. Y is a Supervisor who has experience working on projects for many years and acts as a supporting informant in this research. The following is an excerpt from an interview with Mr. Yes, before work because I don't have a special daily

budget for housekeeping, the vendor's obligation to clean the area because they are the ones who dirty the area.

Housekeeping is the activity of tidying up the work area from the remaining materials used and from messy work equipment so that the materials and work equipment are neatly arranged and stored safely so that if there are workers who want to continue the work they can use the work area safely. From the interview excerpt above, it can be concluded that for housekeeping activities, Supervisors are still unable to provide an adequate number of workers to carry out housekeeping, whereas according to safety induction procedures, Supervisors are required to carry out housekeeping 10 minutes before starting work and 10 minutes before completing work, so this proves that Supervisors do not have an attitude that supports the implementation of housekeeping which is part of construction safety. The attitude of supervisors who do not support the implementation of housekeeping will be one of the shapes of workers' perceptions regarding the implementation of construction safety.

The influence of social support on behavior change has been explained by Surdiyah Asriningrum in her research entitled correlation between intention, social support, health information, personal autonomy, situations to act in changing the behavior of nurses sorting medical waste at Al Islam Hospital Bandung. In this study, it was explained that the correlation between intention (X1) = 11%, social support (X2) = 0.31%, health information or health facilities (X3) = 1.1%, personal autonomy (X4) = 0.01% and situations for action (X5) = 0.003%, have a positive relationship in influencing changes in nurse behavior.

Mr. I is an occupational safety and health coordinator who has experience working on projects for many years and acts as a key informant in this research. The following is an excerpt from an interview with Mr. me, "In terms of occupational safety and health and top management down to the bottom... top management provides representatives or has a long arm from top management with the presence of SO (safety officer), safety man, flagman, and so on. They will handle the work in their own area. And it still all comes down to accountability for the leader, the situation in the field ends with the Site Operations Manager (head of the field). Site Operations Manager (SOM) / field head, that's it... From that, it still ends with Site Operations Manager, because the Site Operations Manager is directly responsible to the project leader. The head of the project, the head of the project, that... depends on what field the guest is in... in the field of... work, the structure definitely directs it to the Site Operations Manager. So, from Mr. Site Operations Manager, that's just to the executor. In terms of occupational

safety and health, in terms of occupational safety and health... the project leader or chief may give instructions or add work items such as closing fences. This can be direct, or in terms of occupational safety and health or the occupational safety and health manager giving us input to add to this, add to this... that's how we have done it. We are proposing to have this sign installed. Then we have to protect (scaffolding), even though protecting is not everything, we have to use this standard. It's good, using that, but the impact is that if we make... the railing die, we can't still make progress. Except for building work, if the building is being cast.

Mr. Y is a Supervisor and has the position of superior Occupational Safety and Health Coordinator and acts as a supporting informant. The following is an interview excerpt from Mr. it had been dismantled), I asked Mr. J, Mr. T (deputy foreman) to repair the jack base, using ferry wood. Yes... that's actually true, maybe they have a reason. Now, sir, there are things that they might, maybe say they think they are still with us PT.X. Maybe their gaze is there, maybe if you go straight to them, they won't pay attention, because they think they're still with us. So, if you have something you want to convey to them, you should convey it to me first, and then I will convey it to them. I've told you beforehand, I'll call you straight away, but maybe beforehand you'll just talk to them, that's actually possible and there's no problem, but next time if you keep calling me, I'll tell you the details later. I'll tell them, that's good sir, they might think it's not something important that needs to be done immediately. Yes, we'll fix it later. Limited to cross bracing to get there without disturbing the formwork installation. Yes, at least maybe give it a strap to strengthen it. Yes, because if I tie it to the iron it will definitely be removed again, so later I will make my own temporary to support it to the scaffolding without being connected (tied) to the iron. Because if the formwork is installed it will be annoying, because it will be removed again. Oh, that means I'll drill again, right? Yes, it will be drilled again, inserted there, then tied, yes, drilled there, drilled (tied), drilled in the pile cap or pedestal and the balance of the scaffolding with a size of 1.7 x 1.2 has already been taken into account, The free standing (jack base/transom part of the scaffolding) is already standing on its own, if there's anything else there, just add bracing, if it still stands by itself, I don't think it's okay, unless it's mounted incorrectly. That's it, sir, maybe if someone wants to fall, he will automatically push one of the scaffolding components in whatever direction, that's the purpose of anticipating something like that. It's okay, we'll drill it later and put it in. But can you tie it in a column? What is it tied to the column (part of the bridge structure) for? It's not needed for support. Yes, that means before installing the formwork, sir. Still installing iron, no problem. When you've finished installing the iron, there's no problem removing it. To avoid overtraining, use the scaffolding. Yes, that's the function, sir, because it will take them several days to reach the iron fitting. We can condition it later."

From the interview excerpt, information was obtained that according to key informants and supporting informants, for securing scaffolding which has three levels, they think there is no need to install railings on the second level because it will hinder the progress of the iron and formwork installation work. The supporting informant, namely the Supervisor, agreed to

make improvements to the scaffolding, but the informant also stated the limitations of installing cross bracing and offered a solution by making his own temporaries to support the scaffolding without attaching it to iron, considering that the formwork would be removed again. However, in practice in the field, it turns out that until the pier head was cast, the railing (safety fence) was still not installed and anchors were not provided to support the body hardness,

Based on Minister of Manpower Regulation number 9 of 2016, chapter three, working on temporary work floors, article 12 paragraphs 1 and 2, states that efforts to prevent falls from temporary work floors can be by using personal fall arrest equipment in the form of:

- Automatic retractable pull (retractable lanyard) or
- Double lanyard with hook and absorber.

In the fourth part of article 17 moving vertically or horizontally to or from the work floor, it is explained that the company has the right to provide means of transporting people for the movement of workers to or from the work floor. In the case of certain types of work and conditions where people transport equipment as intended in paragraph 1 cannot be installed, the movement of workers can be carried out using the following techniques: 1. Vertical individual fall arrest device 2. Horizontal individual fall arrest device 3. Individual fall arrest device with double rope hook and shock absorber 4. Individual fall arrest device with integrated belay 5. Individual fall arrest device with automatic pull-pull. Article 22 states that companies are obliged to ensure that fall protection devices meet occupational safety and health requirements. Article 23 states that fall protection devices consist of collective and individual fall prevention devices and collective and individual fall arrest devices. Article 24 states that collective fall prevention devices must meet the requirements for parapet walls or safety fences with a minimum height of 950 millimeters, and safety fences must be able to accept a minimum load of 0.9 kilonewtons. ⁽¹⁸⁾

According to OSHA 29 CFR 1926.502 concerning safety and health regulations for the construction (fall protection), there is a collective fall protection safety net. Personal fall prevention devices (lanyards, anchorage, and carabiners). The use of lanyard types must be adjusted to the type of work at height, the height of the work, and the worker's load because each type of lanyard has different specifications, namely the number of ropes, thickness, diameter and length of the lanyard. Individual fall arrest devices (vertical and horizontal lifelines). So it can be concluded that at the location of the pier head (part of the bridge construction) reinforcement installation work area where scaffolding is installed, anchors must be installed to support the body hardens and railings as a safety fence for the edge of the platform, while the key informant argued that installing the railing would hinder progress. This shows that the informant does not have a supportive attitude towards the implementation of safety measures for working at heights, which is a high-risk job because the pierhead reinforcement work is carried out at a height of four meters even though he knows that the installation of anchors and railings (safety fences) is necessary for security measures and is mandatory. By

law. (19) The attitude of key informants and supporting informants who do not support the installation of anchors and railings (safety fences) means that they do not convey to workers information regarding the installation of anchors and railings (safety fences) for safety measures for pierhead (part of the bridge structure) work which is work in At height, this can be seen from interviews with workers, There is no counseling material regarding the importance of installing anchors and railings (safety fences) as safety precautions for working at heights, so this causes workers not to know that installing anchors and railings (safety fences) is necessary. So it can be concluded that one of the factors that have the potential to shape workers' perceptions of the implementation of construction safety management is the supervisory role of the Supervisor and Occupational Health and Safety Coordinator in building safety which is an extension of top management on the project.

Mr. SW and D are workers on the PT. The following is an excerpt from an interview with Messrs. SW and D, "Yes, that's enough, just have shoes, a helmet vest, to maintain health and safety, that's enough. Usually use it straight away. But if the person leaves, won't they use it again? Yes, maybe something like that. " From the interview above, it can be concluded that workers do not understand the potential dangers in the workplace so they do not have the awareness to comply with the use of Personal Protective Equipment (PPE). So this proves that awareness in implementing compliance in the use of Personal Protective Equipment (PPE) is one of the factors forming workers' perceptions of the implementation of construction safety management.

The following is an excerpt from an interview with Mr I as the Occupational Safety and Health Coordinator who is the key informant and Mr Y as the Supervisor who is the supporting informant, "For the training itself, like us, basically yes. Firstly, we are holding training in terms of worker safety, for example first aid for accidents, treating injuries. Each project is actually equipped with a safety team to... try the first aid for work accidents, First Aid for Accidents. That, seen from the accident rate. If the accident is just something light or small, like a scratch or trip, bleeding, it can be handled directly there. But if

it's really serious, what we'll do is take him straight to the hospital, that's it... Not here yet, it's done in practice with friends. Have you not had training with occupational health and safety officers? I don't know... But I saw Mr. Iq that there were starting to be several lines there. It's just that I didn't follow it directly. Yes, it should have been done, like a kind of simulation. " From the interview excerpt above, it can be concluded that the Occupational Safety and Health Coordinator is of the opinion that First Aid in Accident training has been provided for safety personnel. First Aid in Accidents is only used for minor injuries, if the injury is more serious, you must be taken to hospital. In fact, the occupational health and safety training provided should not only be First Aid for Accidents, for example firefighting training, or safety training to provide assistance to workers who are drowning or have fallen into rivers/waterfalls. Meanwhile, workers must also be given occupational safety and health training, it is not just safety men who are given occupational safety and health training. Apart from that, from the interview quote above, we can see that there is a lack of supervision from Supervisors in the implementation of construction safety programs because Supervisors do not know whether occupational safety and health officers have or have not carried out occupational safety and health training for the project team even though in the project the Supervisor plays the role of coordinator. project or an extension of the function of the field head who is tasked with monitoring all work programs on the project. According to research from Dina Lusiana Setyowati, Diana Pratiwi, and M. Sultan regarding the relationship between knowledge, attitudes, training, supervision and perceptions regarding the implementation of occupational health and safety management systems, it shows that there is a relationship between knowledge ($p=0.029$), attitude ($p=0.002$), and K3 training ($p=0.028$) with perceptions about the occupational health and safety management system. Occupational safety and health training can increase workers' information and competence in the field of occupational safety and health. This proves that occupational safety and health training has the potential to be one of the factors that shape workers' perceptions of the implementation of construction safety management.⁽²⁰⁾

Table 8: Number of Initial Codings Appearing in Verbatim of Main Informants, Key Informants, and Supporting Informants Regarding Weakening of the Authority of Occupational Safety and Health Officers in making decisions that support the implementation of construction safety management

No	Theme	Code Number	Total
1	The position of occupational safety and health officers in the organizational structure.	I37,I73,I78, Y3,	8
2	The authority of occupational safety and health officers in the organization is under the Supervisor.	Y494,Y49, I11, I21.	

The following is an excerpt from an interview with Mr. I as the Occupational Safety and Health Coordinator who is the key informant," As before. All of that must be related, whether he wants to be safe or not. We can't, as occupational safety and health officers, we just remind them. Yes or not? We cannot change someone's character or behavior that is not good with people. We can direct it if the person wants, by directing when the work will be carried out. As to work at height, we remind (wear) a body harness. We are also obliged to be able to stop working. Although, what kind of notes and coordination are there with the implementers? We can't stop it immediately, but

we don't have confirmation from the implementer, that's wrong. And... basically what we are like, we will convey it first. The executor is okay, the supervisor should be able to pressure him to go to his foreman. We only suggest, "Sir, this condition is not safe, I will stop temporarily", stopping temporarily is not stopping the work, it should not be done, that's not it. Don't mistake the meaning either. Temporarily stop, stop as long as the worker uses complete Personal Protective Equipment (PPE) and occupational safety and health equipment needed for the job. After using it, continue, that's it.. During this rainy season, we must.. be able to... communicate with the implementer to

stop for a while. For... that work, that... that work is in an area that is potentially vulnerable, until... it can be controlled again once we have installed... a barrier.. made a barrier... or we are sloping, or we are casting. That's when the workers started again at that vulnerable point. That's it, that's how I am. For, yes, everyone, the existence of occupational safety and health is for, too... Maintain the safety of workers. Point number one has already been mentioned. We have to commit to everything, it can't just be safety and health at work, only for implementers, and also for superiors, right? We also have to look after the workers, especially the workers. How to ensure there are no incidents. That's, what, with what? With exposure to occupational safety and health, induction... induction, then briefing in the field. What are the potential dangers, we mention them. Then how do we handle it in terms of occupational safety and health? We put up signs, we put up barricades. This is it, for now... Not yet, but according to them it can still be conditioned. But we have anticipated it too. It's like... there's one here, there's also one in the dotted area, like that. And those who know that there will soon be a hole dug to be filled in or... the work must be closed immediately. It looks at the needs and work methods of the implementer. We only suggest that in terms of worker safety and health, we provide barricades, we provide barriers, that's it. But we are still coordinating with the implementers. At least we have provided protection to the workers themselves if they don't see the excavation at night, that is.

From the excerpt from the interview with the Occupational Safety and Health Coordinator, it can be concluded that if the Occupational Safety and Health Officer wants to stop work where the implementation of the work does

not meet construction safety requirements, the Occupational Safety and Health Officer must still get permission from the Supervisor first. In fact, if we refer to the Minister of Public Works and Public Housing Regulation number 10 of 2021 concerning guidelines for construction safety management systems for construction service providers in the organizational structure section, it is described that the construction safety unit consists of a quality assurance unit, a safety and health unit, as well as an environmental management unit and traffic. ⁽¹⁶⁾ Occupational safety and health officers including those in the construction safety unit. This construction safety unit has the same position as the project head which is connected to the line of coordination and internal audit, which means that the construction safety unit has a higher position than the Supervisor because the Supervisor is under the implementing manager who is located below the project head who is connected to the line of instruction. So it can be concluded that there has been a weakening of the authority of occupational safety and health officers in practice in the field, so this causes occupational safety and health officers to assume that their position is under the coordination of the Supervisor, so they cannot have the same position in deciding regarding actions that should be taken. Taken in overcoming potential hazards in the project. So that in carrying out their duties as occupational safety and health officers they cannot act optimally because occupational safety and health officers who should function are the ones who take care of security needs in work which are usually often ignored by supervisors who prioritize work progress and sometimes neglect or take shortcuts. Which deviates from construction safety requirements. This has the potential to shape workers' perceptions of the implementation of construction safety.

Table 9: Number of Initial Codings Appearing in Verbatim of Main Informants, Key Informants, and Supporting Informants Regarding Awareness of Implementing Construction Safety Management

No	Theme	Code Number	Total
1	Workers' attitudes regarding the importance of construction safety in overcoming potential hazards on projects.	G19, P89, D18, D19, D20, D21, SW21,	16
2	Workers' responses regarding the importance of worker participation in implementing construction safety.	T9,T22, T7, T71,T16T17, G20,	
3	Workers' attitudes in using Work Protective Equipment that must be installed on the project.	G21.	

Mr. D is a worker on the PT. The following is an excerpt from an interview with Mr. D who was carrying out foundation excavation work, "What do you think regarding the work stopping regulations that have been implemented on this project? What do you mean, for example, someone told you that it's not safe to stop because it's raining, what do you think? " Yes, that's okay, for example, Mr. I told you to stop first if it rains, even if it's a little rain, for fear that something will happen. What do you think if an officer tells you to provide safety equipment for work in the area first? For example, there is an officer who tells you to give them a ladder in the area first before continuing work? So you have to stop working first. Yes, it's okay if you're told by the occupational health and safety officer, leave your work for now, put up the ladder first, if you're not busy, okay, If you're busy later, do it later. Yes, if you're told to look for safety, it's okay to stay safe. Yes, stop for a moment, it's okay if it doesn't last an hour, if it's an hour then...if it's a while it's okay...you have lots of friends. " From

the interview above, it can be concluded that workers are willing to install protective work equipment if given the order to install it. Occupational safety and health officers and supervisors should require that all work has safe access, including foundation excavation work, stair access should be provided. So it can be concluded that the effectiveness of supervision carried out by occupational safety and health officers and supervisors to instill awareness of occupational safety and health risks is still not optimal because the workers should have set the access date to the excavation area without having to wait for orders from the supervisor/occupational safety and health officer. Because the stairs are a safe means of getting to the excavation area. So this proves that the supervision carried out by occupational safety and health officers and supervisors influences workers' attitudes in dealing with potential dangers in projects, so it can be concluded that workers' attitudes in overcoming potential dangers in projects

has the potential to shape workers' perceptions of the implementation of risk management.

The influence of attitudes perceptions of the implementation of occupational safety and health can be found in research from Ulfa Mona Lisa, Subakir, Renny Listiawati entitled relating to unsafe behavior in PT service workers. Agung Automall Jambi Branch. In this research, it was explained that based on the univariate results, 26 people (55.3%) had negative attitudes and 21 respondents (44.7%) had positive attitudes. It can be concluded that someone with a positive attitude tends to behave well, especially in maintaining their own health and safety at work, and vice versa, people with a negative attitude tend to behave badly in maintaining their health and safety at work. ⁽²¹⁾

Mr T is a worker on the PT.X bridge project who has many years of experience in construction projects and is one of the main informants in this research. The following is an excerpt from an interview with Mr T, "Well, if you have ever... during this project, on this bridge project, have you ever been asked for input, feedback or suggestions regarding worker safety, right? For example, I want to sleep, like that. I'm just about to sleep now. Have you ever been asked for input or information regarding work safety? For example, there is... there Supervisors or... maybe the Supervisor here, Mr. Y, or from the occupational safety and health officers here, there are Mr. Never. From the interview above, It can be concluded that workers still have low awareness of participating in construction safety management because workers never provide advice regarding construction safety to either occupational safety and health officers or supervisors on duty in the field. The second conclusion that can be drawn is that there are still very few efforts made by occupational safety and health officers and supervisors to encourage worker participation because these workers have never once been invited to discuss or asked for advice regarding the implementation of construction safety even though these workers have been working on the project for a long time.

D. Exploration of Workers' Knowledge, Attitudes and Practices

The following is an explanation regarding the results of the excavation regarding knowledge, attitudes and practices of workers regarding the implementation of construction safety as well as support from Supervisors and occupational safety and health officers in supporting the implementation of construction safety:

- Workers have the knowledge that prioritizing construction safety is something that is required on the project thanks to the familiarization and supervision of Supervisors and occupational safety and health officers. Workers know that realizing construction safety requires their participation, one of which is using Personal Protective Equipment (PPE). However, there are still many workers who do not have knowledge regarding the potential dangers in their respective work areas and the types of Personal Protective Equipment (PPE) they need while working. Workers still do not know the role of occupational safety and health officers

and supervisors in projects related to implementing construction safety.

- Some workers do not have awareness in implementing construction safety because they still underestimate the potential dangers that exist in projects, especially work at heights and do not have awareness of the importance of using the type of Personal Protective Equipment (PPE) according to the potential dangers that exist and do not have the awareness to Actively participate in the implementation of construction safety.
- Some workers have not complied with the practice of using Personal Protective Equipment (PPE) and installing Work Protective Equipment for work at heights.
- Social support provided by Supervisors and occupational safety and health officers includes giving advice to prioritize safety at work, and comply with regulations on the use of Personal Protective Equipment (PPE).

IV. SUMMARY

Factors that influence the formation of workers' perceptions of the implementation of construction safety based on research results are leadership in implementing construction safety management, worker experience, project team collaboration in building construction safety, awareness of implementing construction safety management, occupational safety and health education provided, and weakening of authority. Occupational safety and health officers in making decisions that support the implementation of construction safety management. After carrying out observation and analysis activities from the research results, the following suggestions can be given by researchers:

- Suggestions for PT.X occupational safety and health, namely as a partner of the project head so that occupational safety and health officers can carry out their functions more optimally without being under the control of the Supervisor.
- PT. X needs to provide anchors, life lines and body hardness according to standards to meet construction safety requirements for work at height.
- Further research can examine the contribution of the factors that shape these perceptions so that appropriate methods can be produced to form appropriate worker perceptions regarding the implementation of construction safety management.

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