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The Effect of Lack of Control on Unsafe Action on Workers in the X Apartment Construction Project

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ABSTRACT

Work accidents are generally caused by two main factors: unsafe actions and unsafe conditions. According to the domino theory, lack of control and basic causes are the main causes of hazardous actions. This study aims to analyze the determinants of the causes of unsafe actions in the construction project of X Apartment. This research is a quantitative study with a crossectional design, conducted at the X Apartment construction project from September 2023 to March 2024. The population was 200 workers, with a sample of 134 workers based on the Slovin formula. Data analysis used linear regression tests and path analysis. The results showed that the highest age was 22-37 years as many as 95 people (70.9%) and the highest level of education among workers was high school as many as 85 people (62.9%). There is an effect of lack of control on unsafe action (0.001), It is recommended that workers pay attention to their physical capabilities and not push themselves beyond the limits of their physical abilities. Management is also expected to pay attention to the physical capabilities of workers to avoid unsafe acts

INTRODUCTION

The construction sector is a very important and strategic driver of economic growth and development progress, especially through infrastructure development. This sector includes workplaces that have a high risk of work accidents and work-related diseases. The construction sector employs 7% of the number of workers worldwide, however, the number of work accidents caused by the industrial sector is 30-40% of the total accidents in all industries. (Sunindijo, 2012).

The Workplace Safety and Health Institute (WSH) states that the number of deaths due to work accidents in Asia is high. Data in the United States in 2017 showed that 49.4% of construction workers experienced fatal injuries (Workplace Safety and Health Institute, 2017), while in Japan the worker death rate was 909 people in 2018, and 34.7% were construction workers (Guo, 2020). The construction sector has a high risk of work accidents due to frequently found unsafe behavior (Alfiansah Yunus, Kurniawan Bina, 2020).

In general, work accidents are caused by two main factors, namely unsafe action (Unsafe Act) and unsafe conditions (Unsafe Condition). Based on statistical data in Indonesia, 80% of accidents are caused by unsafe actions and 20% by unsafe conditions (Silalahi, 1995). Unsafe acts are defined as all human actions that can cause accidents to oneself or others (Silalahi, 1995). Based on research conducted by G.A. Irhandy and Dadan Erwandi (2022) unsafe actions that are often carried out originate from mistakes mostly due to human negligence regarding safety guidelines, the nature of work, and the type of work and equipment used. Worker characteristics including age, work experience, and level of education can be a consideration for a person's safety behavior. (Irhandy & Erwandi, 2022).

Apartment X is an apartment located on Medan and is currently under construction. Apartment X construction workers used cranes to move materials, then workers used passenger hoists to move between floors, and workers also used gondolas in the process of installing glass frames. Current work at the apartment construction site is: installing glass frames, cleaning floors 3-14, casting columns on the 15th floor, 16th floor, and 17th floor, electrical work, widening the parking area, iron fabrication, demolishing the old building, and finishing the 2nd floor.

The unsafe action conditions found in the construction of the Apartment as well as excess self-confidence when working, lack of work standards, no equipment maintenance, and no job training. When the initial survey was carried out, one minor incident occurred, namely a worker's back was injured while carrying out iron fabrication work in the stair area. The worker fell backward while fabricating the iron, behind the worker there were remaining pieces of iron from the stair castings which were not covered, the worker also did not wear work clothes and a safety vest due to laziness, and discomfort in using PPE so the worker suffered injuries in the area. back. The workers who built this apartment used various equipment such as cranes to move various materials. Workers also use passenger hoists to move between floors and use gondolas in the process of installing glass frames.

Until the time of observation at the location of the Apartment floor finishing

Based on the problems above, there are quite a lot of unsafe action factors that occurred in the Apartment X construction project. So the researcher wants to analyze the effect of lack of control on unsafe actions in the Apartment X Development project

METHODS

This type of research is quantitative research with a cross-sectional research design, to examine the effect of lack of control on unsafe actions among workers in the X Apartment construction project. Data collection using a 42 question questionnaire, which was adopted based on domino theory frank bird, germain, and clark. the questionnaire has been tested for validity and reliability. the population of workers was 200 people with a sample of 134 people. sampling using simple random sampling

RESULTS AND DISCUSSION

1. Description of the Characteristics of Apartment X Workers

Table 1. Description of Characteristics of Apartment X Workers

Variable	n	%
Age		
22-37	95	70,9
38-50	39	29,1
Education		
SD	10	7,5
SMP	10	7,5
SMA	85	63,4
SMK	24	17,9
S1	5	3,7

Based on the table above, it is known that the majority of workers in Apartment This is by the study by Dethlefsen et al. who identified that the most common age group representing construction workers in their sample was 26-35 years, which falls within the specified range (Dethelfsen, 2022). These findings are consistent with broader demographic trends observed in the construction workforce, where the majority of workers are in early to mid-adulthood. Further supporting this, research conducted by Riva Mm et al. reported a mean age of 37.9 years among construction workers, indicating a significant representation of workers at the upper end of the 22–37 age range (Riva, 2012). According to research by Changquan, the most common age among construction workers is 22-37 years (He, 2023). The highest level of education among workers is high school as many as 85 people (62.9%) and the least is Bachelor's degree as many as 5 people

1. The effect of lack of control on unsafe actions in Apartment

Table 2. Effect of Lack of Control on Unsafe Action

Lack of Control	B	β (Exp. B)	Confidence Interval for Exp. B		P value
			Lower	Upper	
Unsafe action	0,414	0,404	0,253	0,576	0,001

There is an influence between lack of control and Pvalue (0.001)

The effects of a lack of management controls on unsafe actions in construction projects are varied and have a significant impact on safety outcomes. Lack of control management leads to an increase in unsafe actions, and unsafe actions are influenced by inadequate control management practices. (Ika, 2014). This lack of control can manifest in various unsafe actions and conditions on construction sites because unsafe actions by workers and unsafe environmental conditions (Unsafe Conditions) are the main contributors to accidents in construction projects. Lack of control management leads to unsafe actions in construction.

Unsafe actions in construction are influenced by a lack of management controls. (Diva, 2018). The relationship between management commitment to

safety and employee perceptions of job control is critical. Employees with low job control have poor perceptions of management's commitment to safety, which can exacerbate unsafe actions (Gamar, 2016). Additionally, a lack of strong risk management and control strategies, as observed at the University of Lagos, can lead to a variety of risks including compliance, financial, and operational risks, which indirectly contribute to an environment where unsafe acts are more likely to occur (Primadianto, 2018). Knowledge, attitudes toward working to standards, and worker monitoring are important factors related to unsafe actions, indicating that a lack of control in these areas can significantly influence safety outcomes (Keshinro, 2018). Lack of supervision can influence the occurrence of unsafe actions due to a lack of supervision at the construction site. Of all the floors that are being worked on, there are only 2 supervisors, 1 HSE supervisor and 1 HSE Officer, which causes a lack of supervision of workers, based on Permanaker number 1 of 2020 concerning labor inspection, supervisors have the authority to stop the work process if the work is deemed dangerous and not feasible to prevent unsafe actions from occurring

CONCLUSION

Based on the research objectives and the results of the research analysis obtained from the determinants of unsafe action among workers in the Apartment X Construction Project, the conclusion that can be drawn is that there is an influence between lack of control on unsafe action with a p-value of 0.001.

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