The Effect of Health Safety Environment (HSE) on The Productivity of Construction Workers in Wall and Plaster Work at DC MUI BOYOLALI

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Abstract. Analyzing the effect of Health Safety Environment (HSE) on the productivity of construction workers in wall and plaster work. The method used in this study is a descriptive method which aims to describe and describe the nature of something that was taking place at the time the research was conducted and to examine the causes of a particular symptom. The results of the analysis and discussion carried out that those who use incomplete HSE equipment do not affect work productivity time. From the results of this case study it can be concluded that the use of incomplete PPE equipment does not affect productivity effectiveness.

Keywords: *HSE, Personal Protective Equipment (PPE), Productivity.*

1. Introduction

Productivity or what is known in English is productivity formed on the basis of two words, namely product which means product and activity which means activity. Broadly speaking, productivity has a meaning as an activity to produce something, be it in the form of a product or service. For more details, here are some definitions according to some experts:

a. Simamora (2004) states work productivity is the ability to produce goods and services from various resources or production factors that are used to compare the results obtained with a predetermined time with the participation of labor or employees.

b. Handoko (2011) states that productivity is the relationship between the inputs and outputs of a productive system. In theory, it is easy to measure this relationship as the ratio of output to input. When more output is produced with the same amount of input, productivity goes up. Likewise, when fewer inputs are used for the same amount of output, productivity also increases.

Occupational Safety and Health (HSE) is the provision of protection to everyone in the workplace, which relates to the transfer of raw materials, the use of construction work equipment, the production process and the environment around the workplace. While Construction Occupational Safety and Health

(HSE Construction) are all activities to guarantee and protect the safety and health of workers through efforts to prevent work accidents and work-related illnesses in construction work. The goal of the OSH program in general is to accelerate the process of the national OSH movement in an effort to empower occupational safety and health in order to achieve a zero accident rate. In the HSE program because PT. Mitra Anugrahjaya Pratama Construction.

Productivity Type According to Hariani in Afriani (2018) states that productivity can be grouped into two, total productivity and productivity of a factor. The following is an explanation of the types of productivity according to Hariani:

a. Total Productivity Productivity is measured from various constituent factors such as: land, model, technology, labor and raw materials, which is called the productivity of various factors. This productivity is often referred to as total productivity.

b. One Factor Productivity In addition to calculating the productivity of various factors, productivity can also be measured for each factor, which is called single factor productivity. Productivity that is often calculated is labor productivity or in the management context it is better known as performance. A worker or group of workers is judged to be productive or not depending on performance. Workforce performance can be measured using the concept of performance appraisal.

Productivity Elements

Productivity has several elements including:

a. Effectiveness Effectiveness is a measure that can describe how far the target can be achieved. Effectiveness is more directed towards expenditure and income issues still receive less attention, therefore high effectiveness is not guaranteed to be efficient.

b. Efficiency Efficiency is the ability to carry out tasks properly and accurately (not by wasting time, energy, costs).

c. Quality Is a benchmark that states how far the specification requirements and expectations have been met. In addition, quality is also related to the production process which affects the quality of the results to be achieved as a whole.

2. Methods

A. Collection Techniques

Collecting data in a study aims to obtain objective and relevant data. The type of data that will be used in this study consists of primary data and secondary data, namely:

a. Primary data

Primary data collection by direct observation of respondents at work using observation sheets and conducting interviews. Primary data in this study were obtained from:

1) Interview

The interview is by asking the respondent directly (Anhar Januar Malik, 2013). In this case the data was obtained by conducting interviews with the leadership, OSH experts, and several employees to obtain the desired information.

2) Observation

Observations are used to observe the performance of workers in the Boyolali City Health Office project. Observations in this study aim to obtain data in the field, namely the application of OSH in the Boyolali Municipal Health Service project.

b. Secondary data

Secondary data concerning the company, including employment data obtained at PT. Mitra Anugerahjaya Pratama. Secondary data in this study were obtained from wall work and plaster work.

B. Method of collecting data

Data collection methods used in this study are:

a. Literature Review

Literature review Literature review, namely research conducted by collecting, reading and studying literature and books as well as references that are relevant to the problems studied to obtain concepts in an effort to develop a theoretical basis that is very useful in the discussion.

b. Field Review

Field review, namely research conducted by obtaining direct data through observing the performance of project workers in the DC MUI BOYOLALI project.

C. The data processing

method in this research is using the Time study method which aims to describe and describe something that was going on at the time the research was conducted and examine the causes of a particular symptom. This method provides accurate information that is useful for the development of science and can be applied to various kinds of problems.

How to analyze the data conducted in this study are as follows.

a. Calculating the daily effective time of each mason who is used as the object of research based on observations. The effective time is calculated when the masons and experts work using a stopwatch. The stopwatch will stop if the builder is doing other activities outside of work. The stopwatch will be positioned again when the builder returns to work.

b. Calculating the area of wall and plaster work per day produced by each mason and kenek.

c. determine the value of the quality of the results of the area of wall and plaster work achieved by each research object. If it is rated with the number "I" and if it is not appropriate it is scored with the number "0".

d. Determine the productivity value by multiplying the Productivity value with the value achieved by each research object.

3. Result And Discussion

Results and discussion on wall plaster work

The wall plastering work at the DC MUI Boyolali project was carried out by 8 masons and 8 kenek. In this study, only focusing on masons and 2 kenek on plastering walls. Research runs 7 working days.

The time to start working as a mason and kenek is in accordance with the provisions of the rules. Most of the builders and kenek rest or sleep in the mas or the bed. This is one of the reasons for being late for work. Work locations that are too close will have a negative impact on workers, namely the handyman and assistants think that the location is the same Closer it will be faster to arrive at the job location. This is what often underestimates the timeliness of work. Usually they start work at (08.00-08.30) WIB every working day. For lunch break at 11.30 -12.30 WIB. And the time to start back to work after taking a break is also not the same. Discipline for returning to work depends on each individual parent and grandmother. Time to end work in the afternoon around 16.30 – 17.00 WIB.

Observations and recordings are carried out directly in the field by observing the movements of the tukan and kenek. when each mason and kenek work according to the wall work will be counted as the effective time (W ef). Activities related to wall plastering work, namely:

a) Wear PPE according to the rules
b) Measure the flatness of the wall with a thread
c) Make a special mix
d) Attaching the specs mortar to the wall
e) Level the surface of the wall with a jidar / rub

Effective time recording calculates the time used until the work stops for a moment to do other work besides wall plastering work. The unit of time used is minutes. When the mason and kenek switch to doing activities other than plastering walls. A special stopwatch to measure the effective time of being stopped and a stopwatch for non-recorded times. Non-effective time (Wn ef) is the time used by masons and assistants to carry out activities other than plastering walls. Activities that are not related to wall plastering work, namely:

a) Talking or chatting until work stops temporarily
b) Smoking / lighting cigarettes
c) Eat / drink

d) Go somewhere else
e) Sit down
f) Silence daydreaming
g) Claim activities that cause work to stop for a while

Personal Protection Equipment (PPE) is safety equipment which is an effort to protect oneself in minimizing danger. The obligation to use PPE has been agreed by the government through the Ministry of Labor of the Republic of Indonesia with industry as business actors. Standard PPE consists of (1) personal protection, (2) breathing, (3) ears, (4) eyes, (5) head, (6) kai, (7) protective clothing and (8) safety belts for workers above 2 meters high above Boyolali City. For the use of PPE in plastering walls at the DC MUI Boyolali project, namely helmets, shoes, vests, harness, masks, and gloves.

Assessment of workers who use working time effectively for two masons and two assistants who were used as research objects consecutively for 7 days are as follows:
a) Handyman and maid (TK 1) with an effective time of 86.59%
b) Builders and maids (TK 2) with an effective time of 88.32%
The results of this case study show that the use of incomplete PPE equipment does not affect productivity effectiveness.

handyman and maid	Non Effective Time (Minute)	Effective Time (Minute)	Number of Working Hours (Minute)	Presentation W ef
TK 1	48,8	315,2	364	86,59 %
TK 2	49	370,8	419,8	88,32 %

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4. Conclusion

In this last chapter the researcher tries to conclude from all the results of the research and discusses the results of this research which are related and also with suggestions for research that is similar to what the author is researching so that it is more developed and of course better than existing research. This study aims to determine the effect of occupational safety and health (HSE) and work discipline on the work productivity of DC MUI Boyolali employees. Based on the results of the analysis and discussion carried out using multiple linear regression.

This study aims to determine the effect of occupational safety and health (HSE) and work discipline on the work productivity of DC MUI Boyolali employees. Based on the results of the analysis and discussion carried out using multiple linear regression, the following conclusions can be drawn, Occupational safety and health (HSE) has a significant influence on work productivity in the DC MUI Boyolali project. From the results of this case study, those who use incomplete HSE equipment do not affect work productivity time. The results of this case study show that the use of incomplete PPE equipment does not affect productivity effectiveness.

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