

Differences in the Effect of Occupational Safety and Health on Employee Performance in the Production and Non-Production Divisions of Manufacturing Company “X” in Cikupa District

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ABSTRACT

Company "X" is engaged in the manufacturing industry that produces a series of cables to companies that produce household electrical appliances in Indonesia. Most employees have direct contact with the production process every day, so they have the potential to experience health problems. The purpose of this study was to determine the effect of occupational health and safety on the performance of employees in the production and non-production divisions, either partially or jointly. The sampling method used non-probability sampling, namely purposive sampling where data were collected through questionnaires. Data processing using SPSS ver 29. The results showed that there was an effect of occupational health on the performance of employees in the production department, and there was also an effect of safety on the performance of employees in the production department. On the variables of occupational safety and health together in the production section, the results of the study indicate that there is an effect of occupational safety and health on employee performance. The results of data processing using independent sample t-test on the variables of occupational health in the production and non-production divisions indicate that the average occupational health of the production and non-production divisions is different. For the occupational health variable in the production and non-production divisions, it shows that the average Occupational Safety in the production and non-production divisions is different. While the performance variables of production and non-production employees indicate that the average performance of employees in the production and non-production divisions is the same.

Keywords: Occupational safety, occupational health, employee performance, manufacturing company

1. INTRODUCTION

Production activities cannot be separated from the use of machines. Although the machines and technology used by the company are very sophisticated, the active role of humans is also important and dominant in the company's activities. Humans in companies are people who act as actors and make decisions to achieve the company's goals [1]. Human resources have an irreplaceable role in maintaining the survival of the company, they determine how to improve the company's performance and determine the strategy that must be carried out to achieve the goals of the company. Without the active role of human resources, the company's goals will not be achieved.

Human resources become workers in a company that cannot be separated from problems that are related to occupational health and safety. This problem is not only the responsibility of the government, but also the

responsibility of all parties, namely employers, workers, and the society in the work environment. Occupational health and safety is one of the things that has an important urgency to be considered by the company. This is because the impact of disease or accident resulting from the work environment will harm anyone, both employees and the company. The development of technology will provide convenience in production activities, but the possibility of the risk of work accidents will also be greater. The risk of accidents may occur due to errors in the use of work equipment, for example, there is no personal protective equipment or not following the work regulations that have been set. This can cause a danger and can reduce employee health [2]. Therefore, companies need to introduce and provide an understanding of Occupational Safety to employees in order to implement occupational health and safety in the work environment.

Several factors can affect the health of the workforce, such as the promotion and maintenance of physical, mental and social health in various types of work; prevention of health problems for workers that can be caused by inadequate working environment conditions so that protection is needed for workers in order to avoid risks that can affect occupational health. In addition, it can also be influenced by the placement and maintenance of workers that are adapted to the physiological and psychological abilities of workers, as well as adjusting the duties and authorities of each workforce [3].

The health of a worker can be influenced by several factors, such as physical, chemical, biological, and socio-psychological hazards [3]. Meanwhile, Occupational Safety is the protection for workers related to physical and mental safety in the work environment [4]. Performance is a work achievement that is achieved by workers, both in terms of quality and quantity in carrying out their duties and authorities in accordance with the responsibilities that have been given within a certain period of time [5]. Employee performance is an organizational effort in directing employees which is carried out systematically and continuously, with the aim that employees can have the expected level of performance, provide maximum results, and achieve company goals [6].

According to research by Irawati, Rustono, and Farouk, it shows that top management is committed to the rules and procedures of the work environment, and attaches importance to employee involvement, has a significant effect on employee performance, either partially or simultaneously [7]. Maryjoan and Tom further stated that company leaders must be observant in ensuring reliable management in implementing occupational safety and health strategies. This is intended to protect employees while in the work environment, so that it is expected to reduce employee turnover and improve performance and productivity [8]. The research conducted by Putri, Triatmanto, and Setiyadi shows that performance can be one of the main supporting factors for company performance. If employees feel safe, have a good work environment and are disciplined, then they will produce optimal performance [9].

From the research from Siagian, there is an effect of occupational safety and health toward employee performance simultaneously. Human resources have moral thinking and understanding, a high level of knowledge and creativity to achieve the goals of the company. So, occupational safety and health can be one of factors that affect employee performance [2]. Iskamoto, Ghazali, Afthanorhan, and Narti stated that if employees have good quality, it will be in accordance with the wishes of the company. The company can provide occupational health and safety guarantees for employees that can improve their performance. Studies show that occupational safety and health significantly affect performance [10]. The results of other studies also show that occupational health and safety have a significant effect on worker performance [11] [12]. However, the result of research from Ekowati and Amin found that occupational health and safety couldn't affect employee performance. This study found that satisfaction

mediates the effect of occupational health and safety toward employee performance [13].

Manufacturing company "X" produces a series of cables for companies that produce household electrical appliances in Indonesia. Most employees have direct contact with the production process every day, so they have the potential to experience health problems. Not only health problems, production division employees also face Occupational Safety problems.

2. THEORETICAL STUDY

Occupational health refers to the promotion and maintenance of physical, mental and social health for workers, prevention from health problems caused by working conditions, protection from risks, placement and maintenance of workers in accordance with physiological and psychological abilities, and job adjustments. Factors that can affect occupational health, namely physical/mechanical, chemical, biological, and socio-psychological hazard factors [3]. Meanwhile, indicators to measure occupational health include work environment, physical and mental health, and health maintenance [14].

Occupational Safety is the protection of work security experienced by workers, both physically and mentally in the work environment [15]. Indicators to measure Occupational Safety, namely the state of the work environment, which includes the preparation and storage of dangerous goods and the work space. Another indicator is the use of work equipment, which includes the safety of work equipment that has been damaged and the use of machines, electronic devices without good security, and lighting arrangements [14]. In addition, other indicators to measure Occupational Safety include top management commitment, Occupational Safety regulations and procedures [16].

Performance is work performance (output) both quality and quantity achieved by human resources within a certain period of time in carrying out their work duties in accordance with the responsibilities assigned to them [5]. Indicators to measure employee performance are number of jobs, quality of workers, punctuality, attendance [15], and interpersonal impact [4].

3. RESEARCH METHOD

This research was conducted at a manufacturing company located in Cikupa District, Banten Province. Data collection was carried out in September 2021. The population in this study were all employees in various divisions working in manufacturing companies. The number of employees working in manufacturing companies is 183 people. The sample in this study were all employees of the production division who worked in manufacturing companies totalling 124 employees. Sampling used a non-probability sampling method, namely purposive sampling. Purposive sampling is the selection of

sample members based on certain objectives and considerations of the researcher. Permanent employees of the production division are sampled because employees of the production division, such as Quality Control, Maintenance, Raw Material Warehouse, and Finished Material Warehouse.

The variable of a study is an object chosen by the researcher to be studied and can obtain information related to the object, which can later be drawn to a conclusion. This study uses two independent variables, namely occupational health and Occupational Safety, and employee performance as the dependent variable.

3.1. Occupational Health (X_1)

Occupational health is a physical, mental, and social condition and not just the absence of illness or weakness when carrying out a job. Occupational health is a source of daily life for employees, including when they carry out their work, because, without health, employees cannot carry out their work properly [6]. Occupational health is a condition that is free from pain, both physical, mental, and emotional, which comes from the work environment [5]. In this study, there are three indicators to measure occupational health variables, namely physical and mental health, work environment, and health maintenance [14].

3.2. Occupational Safety (X_2)

Occupational safety is a condition in which employees carry out their work with a limited possibility of an accident so that they do not feel worried about having an accident [6]. Occupational Safety can be defined as the provision of facilities and protective measures in the work environment provided by the company to employees. There are four indicators used to measure Occupational Safety variables in this study, namely the use of work equipment, working environmental conditions [14], top management commitment, and Occupational Safety rules and procedures [4].

3.3. Employee Performance (Y)

In this study, employee performance can be defined as the behavior shown by a person related to work performance in accordance with his role in the company. There are five indicators used to measure employee performance, namely attendance, punctuality, quality of work, amount of work done, and interpersonal impact [6].

3.4. Relationship Among Variables

Employee health includes physical and mental health, and employee health can be disrupted due to illness, stress, or accidents, that not only related to Occupational Safety, but can also cause health problems for employees [14]. Occupational health is a condition that refers to the physical and mental conditions of workers, and workers with

excellent physical and mental conditions will greatly determine the company's overall performance [14].

Employees with poor health will lead to a tendency for high absenteeism rates and low performance levels. Having a good occupational health program will be materially beneficial, because employees will be absent less often, work in a more pleasant environment, so overall they will be able to work longer hours. In carrying out their work, employees need to get protection for Occupational Safety. The more availability of Occupational Safety facilities, the less chance of work accidents. Occupational Safety also aims to increase enthusiasm, work harmony and employee participation, which can have an impact on increasing employee performance [14].

The design of Occupational Safety is made by creating and maintaining a safe work environment. When workers feel that their safety is guaranteed, their performance will increase [14]. Maintaining employee safety is an important thing. The company provides a safe working environment, and becomes more responsible for these activities, especially for organizations that have a high accident rate [5]. Besides aiming to avoid accidents in the production process, occupational safety and health also aims to increase employee enthusiasm, work compatibility and work participation, which can have an impact on increasing employee performance [5].

By implementing occupational safety and health control technology, it is hoped that the workforce will achieve physical endurance, work power, and a high level of health. In addition, the elements in occupational health and safety are not fixated on physical factors, but also mental, emotional, and psychological factors [5]. Safety and health in the workplace is important because the omissions, hazards and risks of occupational safety and health are the moral and legal responsibilities of employers. The ongoing attention to occupational safety and health is important because poor health and injury resulting from the work system or working conditions cause suffering and loss to workers and their families [14].

The data collection instrument in this study used a questionnaire and there are four parts to the questionnaire. The first part is to obtain data about the characteristics of the respondents. The second part is to obtain data related to occupational health. Then, the third part is to obtain data related to Occupational Safety. Finally, the fourth section is to obtain data related to employee performance. The measurement of this research questionnaire uses a Likert scale which has five alternative answers, namely 5 (Strongly Agree), 4 (Agree), 3 (Neutral), 2 (Disagree), and 1 (Strongly Disagree).

4. RESEARCH HYPOTHESES

Based on the research model, the hypotheses could be formulated, which are:

H_1 : There is a positive and significant effect of occupational health on the performance of production division employees in the Company "X".

H₂: There is a positive and significant effect of Occupational Safety on the performance of production division employees in the Company "X".

H₃: There is a simultaneous effect of occupational health and safety on the performance of production division employees in the Company "X".

H₄: There is a significant difference in the employee occupational health between the production and non-production divisions in the Company "X".

H₅: There is a significant difference in the employee Occupational Safety between the production and non-production divisions in the Company "X".

H₆: There is a significant difference in the employee performance between the production and non-production divisions in the Company "X".

5. RESULTS

The instrument for the occupational health variable (X₁) consists of 14 question items, the Occupational Safety variable (X₂) consists of 18 question items, the employee performance variable (Y) consists of 12 question items.

Validity test is done by comparing Corrected Item - Total Correlation (r count) with r table. The r-table value at 0.05 significance (N = 124) is 0.1925. Condition item is said to be valid if the value of r count > r table. Of the 44 items of the questionnaire questions, all of them were declared valid because r count was greater than 0.1925.

The reliability test was conducted using the Cronbach 'Alpha method and the alpha results were obtained in the variable X₁ = 0.893; X₂ = 0.874; and Y = 0.857. All variables have an alpha greater than 0.6 so that they are declared reliable.

Based on the classical assumption test: (a) the results of the normality test for the production and non production divisions with Kolmogorov-Smirnov show that the residual value of the data distribution is normal because of the Asymp value. Sig. (2-tailed) showed results greater than 0.05, namely 0.143 and 0.214; (b) the multicollinearity test results of the production division for the two independent variables showed a VIF value < 10 and a tolerance value for the variables X₁ = 0.812 and X₂ = 0.781. Tolerance values for both variables were > 0.1; (c) the heteroscedasticity test of the production division (left-side) and non-production division (right-side) can be seen using scatterplots showing the points are spread above and below the number 0 on the Y axis. This means that there is no heteroscedasticity in the regression model.

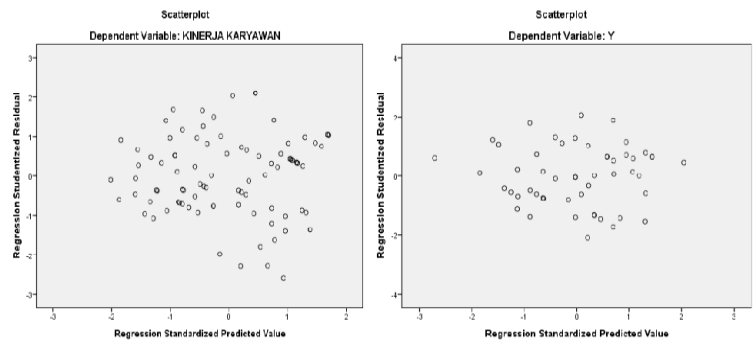


Figure 1 Heteroscedasticity Test Results

The autocorrelation test is done by looking at d_u and d_l in the table. If $d_u < 4 - d_l$, there is no autocorrelation, in the production division, table $d_u = 1.795$. $1.795 < 2.14 < (4 - 1.795) = 1.795 < 2.14 < 2.292$. And the non- production division, obtained in the table $d_u = 1.645$. $1.645 < 2.328 < (4 - 1.645) = 1.645 < 2.328 < 2.462$. So, in the production and non production divisions there is no autocorrelation. The production division's multiple linear regression is $Y = 18.443 + 0.224 X_1 + 0.21 X_2$, and the non-production division's multiple linear regression is $Y = 14.629 + 0.291 X_1 + 0.288 X_2$.

The independent t-test analysis showed that the sig-value of the occupational health variable in the Levene's Test for Equality of Variances = 0.162 (> 0.05). It means that H₄ was accepted, which indicates that the variance of the occupational health population between the production and non-production divisions were not the same. The sig (2-tailed) value assuming the same population variance is 0.000 (< 0.05). It means that H₄ was accepted, this shows that the average health of the production and non-production division employees were different. Likewise, the sig-value of occupational safety variables can be seen in Levene's Test for Equality of Variances = 0.000 (< 0.05). It means that H₅ was accepted, this indicates a difference in the occupational safety between the production and non-production division employees. The next step is to test whether the production and non-production divisions have different mean values. The sig-value (2-tailed) assuming different population variances = 0.000 (< 0.05). It means that H₅ was rejected, which indicates that the average occupational safety between the production and non-production divisions were different. The sig-value on Levene's Test for Equality of Variances = 0.743 (> 0.05). It means that H₆ was accepted, which shows that the population variance of employee performance between the production and non-production divisions were not the same. The next stage of the analysis is to test whether production and non-production have different average values. The sig-value (2-tailed) assuming the same population variance = 0.328 (> 0.05). This means that H₆ was rejected, showing that the average performance of employees in the production and non-production divisions were the same.

6. DISCUSSIONS

Occupational Safety is an effort to create safe conditions for workers by providing protection in the work environment in order to create work comfort. A sense of security at work is very important for workers to renew motivation in carrying out work so that work performance and productivity also increase.

Occupational health and safety policies and programs must be balanced and equitable for all divisions. Regarding the occupational health program, PT X must increase the number of toilets and make separate toilets for men and women in the non-production division. Meanwhile, PT X's Occupational Safety program should provide training to employees on how to anticipate and handle a fire or other unforeseen condition. PT X must also provide complete equipment and personal protection for employees of the non-production division, while employees of the production division of PT. X also need to maintain and improve the occupational health and safety program provided by the company for employees.

Other recommended occupational health and safety programs to improve employee performance: (a) Identify, anticipate, and assess hazards and risks emanating from the work environment and determine whether the measures and controls used are adequate to eliminate hazards and avoid risks; (b) Instruct supervisors on how to communicate, demonstrate, and train employees to use work equipment safely, and implement a disciplinary system to penalize employees who cause unsafe behavior; and (c) Use incentives, rewards, and so on to encourage safe work behavior. The award is given to employees who have ideas on how to increase productivity by prioritizing occupational health and safety aspects, or to employees who have a good health and safety record.

Companies must understand that good Occupational Safety is providing personal protective equipment for employees, paying attention to the condition of work tools, carrying out equipment maintenance, providing ready-to-use raw materials, provide good lighting in the workplace, maintain good hygiene and order. If the company can fulfill these things, employees will work more comfortably without worrying about work accidents, so employees are more productive at work.

The company must implement a work accident risk reduction policy through various occupational safety and health programs that are able to make a positive contribution to increasing employee productivity. There is a need for standardization of personal protective equipment and early knowledge of work risks, for example during an earthquake or fire. Employee health needs to be considered, for example by building a smoking area in the office. Companies also need to try to provide better motivation to employees by providing health insurance, old age insurance, setting up a comfortable workspace to interact with coworkers, and rotating employees to avoid work saturation. Besides that employees are expected to always use Personal Protective Equipment while working so that they can reduce the risk of work accidents and

comply with the instructions for using work tools correctly so that can increase work productivity.

7. CONCLUSIONS

Based on the research conducted, the following conclusions were obtained:

1. Based on the partial test, it shows that there is a significant and positive effect of occupational health on employee performance. Having a sig value of 0.001 (< 0.05) means that H_1 was accepted. There is a significant effect of occupational health on employee performance at Company "X".
2. Based on the partial test, it is known that there is a significant and positive effect of Occupational Safety on employee performance. Having a sig value of 0.000 (< 0.05) means that H_2 was accepted. Thus, there is a significant effect of Occupational Safety on employee performance at Company "X".
3. Based on joint-testing, occupational health and safety variables simultaneously have a significant influence on employee performance. Having a sig value of 0.000 (< 0.05), means that H_3 was accepted. Hence, there is a simultaneous and significant effect of occupational health and safety on employee performance at Company "X".
4. Based on the t-test on independent samples, it was found that the average occupational health had a sig value of 0.000 (< 0.05). So, H_4 was accepted. This means that the average values of occupational health in the production and non-production divisions were different.
5. Based on the independent sample t-test on the Occupational Safety variable, it has a sig value of 0.000 (< 0.05), H_5 was accepted, which means that the average occupational safety in the production and non-production divisions were different.
6. Based on the independent sample t-test on the employee performance variable, H_6 was rejected, meaning that the average employee performance in the production and non-production divisions were the same.

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