

# The Influence of Occupational Safety and Health on Performance with Job Satisfaction as Intervening Variables (Study on the Production Employees in PT. Mahakarya Rotanindo, Gresik)

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**Abstract** This research employed a quantitative approach that focuses on research hypothesis testing to produce generalizable conclusions by means of path analysis. Data obtained from a survey on the research object using methods of questionnaire. In this study there are three variables, the occupational safety and health or OSH (X variable), employees' performance (Y variable), and employees' job satisfaction as the intervening Z variable. Our results shown that: (1) OSH have a significant effect on job satisfaction with a significance value of CR 0.009. Coefficient sign with the positive standard value of 0.351 indicates that as OSH increase, then job satisfaction would also increase; (2) job satisfaction have a significant intervening effect on employees' performance as it's have a significance value of CR 0.000. Sign of coefficient that have a positive standard value of 0.430 shown that an increase in job satisfaction would also increase employee's performance; and (3) OSH also have a significant effect on performance with a significance value of CR 0.004. Coefficient sign with the positive standard value of 0.343 indicates that as OSH increase, and then employees' performance would increase. In overall, these results shown that all the hypotheses could be accepted.

**Keywords** Occupational Safety and Health, Job Satisfaction, Performance

## 1. Introduction

Activities of the production process are inseparable from the use of machines. This put a burden on an employee to be able to use these machines with care to prevent the occurrence of errors in running the machines that could cause accidents. Nevertheless, not only that the feasibility of the engine that must be considered, but also the environment surrounding the location in which the process of production occurs. When these things are not addressed, then it does not cover the possibility that employees would experience accidents during the production process. These facts alone put a company to preserved and maintained occupational safety and health (OSH) to be in the centre of their attention.

Occupational accidents in Indonesia are still quite high, as mentioned below from Suara Merdeka, dated 1 April 2008:

*"The high number of work accidents in Indonesia was*

*revealed in the cases found in 2007 to be as many as 65.474 people. This means that there are five people every day, which had an accident due to lack of implementation of work safety and health management systems in companies. It is also believed there were five industry sectors that dominate the number of industrial accidents, which are construction, forestry, industry, transportation and mining. The data is derived from the 170.000 companies in Indonesia."*

It is assumed that there are 170 000 companies in Indonesia, then from the above data it can be stated that at a company in Indonesia, the chances of accidents is 0.46 times within a year.

PT. Mahakarya Rotanindo (PMR) is one of the furniture companies in Indonesia that located in Gresik. The importance of OSH in PMR is inevitable, especially on their production staff to provide security and comfort to employees at work that could lead to employee's job satisfaction and could improve their employee performance. However, accident at work still occurred in PMR as shown in Table 1 that states during 2009, there is an overall of 10 accidents. In accordance with these data, thus the safety level of human labor as a production factor and as a corporate asset is needed so that optimal performance could be achieved.

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**Table 1.** The work accident in the production department at PT. Mahakarya Rotanindo

Type of Accident	Classification	Number of Accident
Stuck by the machine	Severe accident	3
Exposed to the drill bit	Secondary accident	1
Cut	Minor accident	2
Rubbed by grinders	Secondary accident	1
Fingers cut off	Severe accident	1
Imposed by the material or object	Severe accident	2
Total		10

Source: PT. Mahakarya Rotanindo, 2009

In comparison with previous findings on the number of work accidents in Indonesia, it is seen that the frequency of occupational accidents in PMR is greater because nearly within a month there is one accident occurred in PMR. Based on these, the authors are interested to know: (1) Is OSH has significant influence on employee's job satisfaction in the production department at PMR? (2) Is OSH significantly influences the performance of the production employees in PMR? (3) Is the job satisfaction of employees significantly influences the performance of employees in the production department at PMR?

## 2. Literature Review

### 2.1. Influence of OSH on Job Satisfaction

Human resources is the most important component in the company and in the implementation of the production process, therefore company should pay attention to maintaining OSH. This is done to provide comfort whilst working and the resulting sense of security for the employees at the time of the production process and when dealing directly with their work environment [1]. Various studies have found that OSH that has been performed by company not only provides a sense of security to employees, but also could provide satisfaction to employees [2,3]. When employees are satisfied with the security and safety in their workplace, the accident could at best be avoided [4].

Thus, if OSH could be applied and considered seriously by the company, then it is expected that OSH would prevent and reduce the occurrence of occupational accidents in the workplace [5]. Not only could that, in addition to preventing the occurrence of accidents in the workplace, OSH also increase employee job satisfaction. OSH policy also stated that the company is investing in human resources, not only about their physical safety but also could have a trickledown effect in increasing employee's satisfaction in [6].

In principle, avoidance of accidents could be achieved from implementing OSH programs that at first should be announced by the company [5,6]. This program will not only have implications for the health of employees in their work,

but also on employee's job satisfaction. The OSH program itself consists of job safety regulation, co-worker safety, supervisor safety, and the practice of safety management and the implementation of safety programs [5]. When OSH program can be implemented optimally, then it will have implications on employee's job satisfaction.

### 2.2. Influence of OSH on Employee's Performance

It is clear that the purpose of OSH is to create a safe working environment and employees are protected from workplace accidents or from adverse events. This is attributed to the factors that drive job satisfaction, such as supporting employment condition in which employees care about good working environment for personal comfort and to ease their task because they prefer to work in the physical environment that is not dangerous or troublesome [7].

A good implementation of OSH would foster a sense of security and comfort in the heart of the employee. With the creation of a sense of security and comfort, these in turn would make employees in the better position to avoid work accidents and would not hinder their performance. Thus, the creation of a sense of security and comfort in the workplace would also enable improvement of employee's performance. A positive OSH achievement would create a sense of security that could improve performance, because if employees do not feel safe whilst working, they may not do their job well [8].

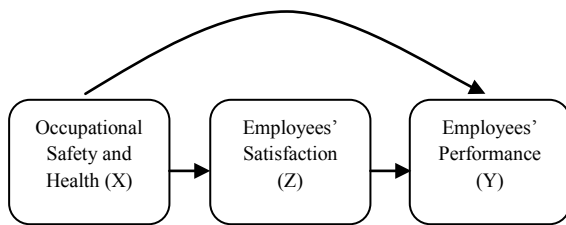
### 2.3. Influence of Job Satisfaction on Employee's Performance

Performance is the result obtained by a person or a group within an organization. This is in accordance with what have been found in previous literature that states "Performance is what is done or not done by employees" [9] and "Performance is the result of the quality and quantity of work accomplished by an employee in carrying out their duties in accordance with responsibility given to him" [10]. These description reveals that the work is accomplished by an employee in performing a task can be evaluated by a given performance level, e.g. the employee's performance could be determined from the achievement of specific targets over a period within the organization.

Several factors could drive employee's satisfaction besides the implementation of OHS program. Employee's job satisfaction could be influenced by several factors that encourage their satisfaction. Aspects of employee job satisfaction consist of a well-balanced compensation, mentally challenging work, supporting co-workers, and supporting working conditions [11]. Only when one or all of these aspects are met, then a company could expect an improvement in employee's performance.

The relationship between OHS and employee's job satisfaction, relationship between OHS toward employee performance, and relationship between job satisfactions to employee performance in the production department at PMR could be described in the conceptual framework as shown in

Figure 1 below:



**Figure 1.** Conceptual Framework

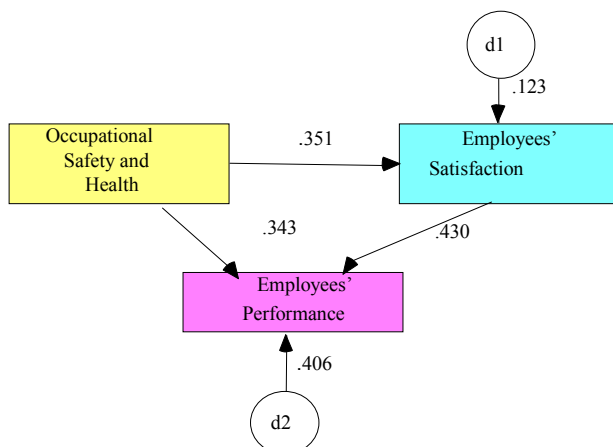
Base on figure 1, we could propose the following hypotheses as follows: (1) OSH has a significant influence on employee job satisfaction in the production department at PMR, (2) OSH has a significant influence on employee performance in the production department at PMR, and (3) Job satisfaction have a significant influence on employee performance in the production department at PMR.

### 3. Research Methodology

The study population in this research is employees in the production department at PMR that located in Segoro Madu Street, Gresik, Indonesia. The current number of production employees is 250 people. In order to be representative, then the sampling procedure must be appropriate. For this purpose, we used random sampling technique and take sample from 20% of the population that amounted to as much as 50 respondents. This is because "if there is a large number of a subject, random sampling could be taken between 10% to 15% or 20% to 25% or more from the population." [12].

### 4. Result

The result of the path analysis based on the standardized coefficient from AMOS is given in the Figure 2 below:



**Figure 2.** The Results of Path Analysis

From figure 2, we could view the results of an analysis based on the standardized path coefficient. First, that implies if the OSH variable is changed, then OSH would lead to

changes in employees' satisfaction. Positive sign indicates positive direction of changes in employees' satisfaction from a change in OSH that indicates when OSH increases, then employees' satisfaction would also increase, and vice versa by the value of path coefficients of 0.351. Second, when OSH changes, this change would change employees' performance. Positive sign indicates positive direction of changes in employees' performance from a change in OSH that implies when OSH increases this is in line with an increase in employees' performance, and vice versa by the value of path coefficient of 0.343. Finally, when employees' satisfaction is changed, this change would bring changes to employees' performance. Positive sign indicates positive direction of changes in employees' performance because of the change in employees' satisfaction that implies when employees' satisfaction increases, employees' performance would also increase, and vice versa by the value of path coefficient of 0.430.

Furthermore, figure 1 also gives the value of the coefficient of determination, which is a coefficient that indicates the degree of influence or contribution of endogenous to exogenous variables (or the influence of endogenous variables on other endogenous variables). The test results by using the coefficient of determination indicate that the magnitude of change in job satisfaction due to OSH (X) is 0.123. In other words, OSH influence on employees' satisfaction was 12.3%. While the magnitude of changes in employees' performance due to OSH and employees' satisfaction is 0.406. In other words, OSH influence on employees' performance and satisfaction was 40.6%.

#### 4.1. Hypothesis Testing

The partial effect's parameter could be determined from the value of CR (Critical Ratio). We could determine whether or not exist a presence of the influence of exogenous variables toward endogenous variables (and from endogenous variable to other endogenous variables) from comparing the probability value with the level of significant ( $\alpha = 0.05$ ). The significance value that is lower or equal to 0.05 implies an existence of an influence. Vice versa if the significance value is higher than 0.05. Results of hypothesis testing could be seen in the table below:

**Table 2.** Results of the hypothesis testing

Variable	CR	Sig. Level	Note
OSH $\Rightarrow$ Employees' Satisfaction	2.594	0.009	Significance
OSH $\Rightarrow$ Employees' Performance	2.887	0.004	Significance
Employees' Satisfaction $\Rightarrow$ Employees' Performance	3.619	0.000	Significance

Source: AMOS

Based on Table 2 above, we could explain that the CR value of OSH toward satisfaction is 2.594. Significant level with a value of 0.009 is less than the cut-off point (0.05), and then there is a significant direct influence between OSH on

job satisfaction, so the first hypothesis is accepted as true. While, the CR value of performance on OSH is 2.887. Significant level with a value of 0.004 is less than 0.05, thus indicates that there is an influence of OSH on performance, so that the second hypothesis can also be accepted as true. Lastly, the CR value of job satisfaction toward performance is 3.619. Significant level (0.000) is less than 0.05 that support the third hypotheses, as there is an influence of job satisfaction toward employees' performance.

## 5. Discussion

Previous hypothesis testing support the first hypothesis and is in accordance with the opinion that if OSH could be applied and considered seriously, the company would be expected to prevent and reduce the occurrence of occupational accidents that could emerge in the workplace [5]. Additionally OSH can also increase employees' job satisfaction. This is similar to the statement that the company's OSH policy is an investment in human resources, not only with regard to the workplace physical safety but also because it could also improve employee satisfaction [6].

The second hypothesis is proven in previous hypothesis testing and in line with previous studies [8], which states that, OSH is essential in creating a safe and comfortable conditions and minimize the possibility of accidents. OSH makes employees have a freedom to work because the employee does not need to have an excessive fear of occupational injuries. Sense of comfort and not have a fear on accidents would make employees have more spirit whilst working, and would increase employees' performance.

The third hypothesis is proven not only based on previous hypothesis testing, but also according to previous studies [13]. A satisfied employee would have a good performance. A person tends to work with passion if satisfaction can be gained from their work and job satisfaction is a key driver of employee morale, discipline, and their work performance in supporting the realization of corporate objectives. High job satisfaction would make employees more loyal to the company or to be more motivated at work, working with a sense of calm, and more importantly would increase their likelihood to achieve high productivity and high motivation.

## 6. Conclusions

There are a few suggestions that may be made from previous discussion, which is based on previous path analysis and hypothesis testing. The first is that the company should improve aspects of OSH as OSH proven to have an effect on job satisfaction. Nevertheless, there are still things that need to be improved, especially aspects that still considered low by the employee. These aspects are in terms of building or location of equipment and machinery that are not in accordance with OSH regulations. Rearrangement should be done on equipment and machinery in accordance with not only the

workflow but also considering OSH.

Second, the company should improve aspects of job satisfaction because it also proved to be influential on performance. Nevertheless, there are still things that need company's attention, especially aspects that are still considered low by the employee. These aspects are related to colleagues' solidarity to follow the rules. Therefore, companies need to increase the role of supervisor to control the employee to work properly. Lastly, the company should be able to boost job satisfaction because employees' sense of satisfaction could affect the quality of their performance. Job satisfaction will be achieved if the employee needs are met through their work.

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