

The Implementation of Occupational Health and Safety (OHS) Program at State-Owned Enterprise: Case Study at Pindad, Ltd., in Bandung, Indonesia

Mahendra Fakhri¹, Nyndira Syafura², Mahir Pradana³

^{1,2,3} Telkom University, School of Communication and Business, Jalan terusan Buah Batu, Bandung, Indonesia

Abstract: *The development of an industry is highly supported by the role of its labors. Therefore, the existence of a well-managed of human resource is required in order to create productive, healthy and competent labors; particularly in the management of Occupational Safety and Health (OSH). The presence of OSH has main objectives in generating the labor welfare. One of the companies who implement the OSH program in Indonesia is PT. PINDAD (Ltd.) Bandung. This company is an Indonesian state-owned enterprise focusing on the military and commercial products. The purpose of this research is (a) to know and analyze any factors that became a top priority in the implementation of Occupational Safety and Health (OSH) for production staffs of department of rail and public transportation, industrial machinery and services division in PT. PINDAD (Ltd.) Bandung. This research is a descriptive and uses quantitative approach with the analytical measurements to define the relationship between the research variables. Incidental sampling technique is utilized on this study where the targeted samples consist of total 110 respondents who are the production staffs of Department of Rail & Public Transportation and Division of Industrial Machinery and Services in PT. PINDAD (Ltd.) Bandung. This study applies Common Factor Analysis (CFA) as the method to analyze the factors by using the total variances and its analysis. There are several main factors in the OSH Program implementation for production staffs of Department of Rail & Public Transportation and Division of Industrial Machinery and Services in PT. PINDAD (Ltd.) Bandung; comprise of the workplace environment condition, the air temperature-setting in the workplace, the light-setting in the workplace, the use of office stationery and the physical and mental condition of the employees are seen as the analysis factors and generated the OSH priority level is seen from the value of factor loading, from the highest to the lowest as follows: the light-setting (0.846), the physical and mental condition of employees (0.830), the workplace environment condition (0.824), the air temperature-setting in the workplace (0.813) and the use of office stationery (0.722) where the total factor has the variance percentage of 65,29%.*

Keywords: *occupational health and safety, workplace security, human resource management, confirmatory factor analysis*

1. Introduction

In the era of global industrialization, industry competition for market share both the market for regional, national and international, carried out by each company on a competitive basis. Industrialization can not be separated from human resources, which every human being is expected to be a resource ready and able to help achieve the company's objectives in the field is needed. Reciprocation of an industry highly supported by the role of labor. In a building a workforce that is productive, healthy and quality, comes the need for good management, especially with regard to health and safety issues. One of the companies that have implemented safety and health in Indonesia is PT. PINDAD (Persero) Bandung. PT. PINDAD (Persero) is one of the strategic companies of State Owned Enterprises (SOEs) engaged in military products and commercial products. Disorders related to the productivity of the company PT. PINDAD (Persero) experienced some number of occupational accidents and working hours lost due to accidents. Working hours lost her missing the point here is the time to finish the job in producing the product so that the product is not resolved within a specified time so that delivery and manufacturing obstacles. Table 1 describes the number of occupational accidents and working hours lost in 2011-2014.

Table 1

No.	Names (Initials)	Ages (years old)	NPP	Dates / Events	Lost Hours because of Accidents
1	AJS	46	K.010646	21 Nov 2011, 15:00	6 days (48 hours)
2	-	-	-	2012 No Accidents	-
3	RM	20	K.010643	22 Feb 2013, 16:30	4 days (32 hours)
4	LA	25	05366	21 Juni 2013, 14:30	2 Days (16 Hours)
5	AS	18	PKL	15 Juli 2013, 15:00	6 Days (48 Hours)
6	DM	29	K.23242	24 Des 2013, 10:00	4 Days (32 Hours)
7	TD	47	01138	20 Sep 2013, 08:00	3 Days (24 Hours)
8	-	-	-	2014 No Accidents	-

Description: 8 working hours per day. From 08:00-16:00

Source: Accidents Data from Dep SARKA, Div.MIJAS 2011-2014

Based on the above problems, the authors wanted to determine and analyze what factors are a top priority in the implementation of occupational safety and health program at the Department of Means of production employees Railways (Sarka), Division of Industrial Engineering and Services (Mijas) PT. PINDAD (Persero) Bandung. By conducting

research entitled "Analysis of Factors Application of Occupational Health and Safety (K3) In Part Employees Means of Production Department Railways (Sarka), Division of Industrial Engineering and Services (Mijas) PT. PINDAD (Persero) Bandung".

Based on the background research that has been described previously, the formulation of the problem in this study is as follows:

What factors are a top priority in the implementation of K3 program on the production employees Means Railway Department (Sarka), Division of Industrial Engineering and Services (Mijas) PT. PINDAD (Persero) Bandung?

2. Theoretical Framework

2.1 Theoretical Approach

a. Human Resource Management

According to Sutrisno (2010: 7) Human resource management is a planning, organizing, directing, and oversight of procurement, development, compensation, integration, maintenance, and termination of employment. With a view to achieving the organization's objectives in an integrated company. Human resource management is critical for companies to manage, organize, and utilize the human resources at their disposal so that they can function productively for the achievement of corporate objectives. Human resources in the company need to be managed in a professional manner in order to realize a balance between the demands and the needs of employees with the company's organizational capabilities. This balance is the key to the company in order to develop a productive and reasonable.

b. Occupational Health and Safety (K3)

According to Ardana et al (2012: 208) occupational safety and health can be viewed from two aspects, philosophical and technical. Philosophically K3 is the concept of thinking and a real effort to ensure the preservation of the labor and especially every human being in general, along with the results of work and culture in an attempt to pay a fair society, and prosperous. Technically K3 is shown in order to safeguard workers and others in the workplace / enterprise always in safe and healthy so that each production source can be used safely and efficiently.

c. Factors of Program Implementation (Occupational Health and Safety) - (K3)

According to Mangkunegara (2009: 162) Factors program implementation Occupational Health and Safety (K3) is:

1. Circumstances The Work Environment

- a) Preparation and storage of dangerous goods should be taken into account safety.
- b) The work space is too crowded and congested be conditioned.

2. Air Settings

- a) change of air in the work space must be good.
- b) The air temperature must be conditioned setting

3. Lighting

- a) The setting and use the right light source

- b) The work space sufficient light

4. Use of Work Equipment

- a) Safety equipment must be good and decent work.
- b) Use of machinery and electronic device should be with a good safety.

5. Physical and Mental Conditions of Employees

- a) Tools senses and stamina employees should be stable.
- b) Emotions employees should be stable, high work motivation, attitude and careless employees not enough knowledge in the use of working facilities, especially working facilities that carry a risk of danger.

2.2. Research Framework

Many factors affect the health and safety within the company. Occupational accidents are usually the result of the actions of labor and unsafe working environments, or a combination of both. According Zamani (2011: 61) said that health and safety is one of the forms of labor protection and became the basic rights of workers. There are several factors the application of health and safety programs according Mangkunegara (2009: 162), among which are:

1. Circumstances of the Work Environment

- a) Preparation and storage of dangerous goods should be taken into account safety.
- b) The work space is too crowded and congested be conditioned.

2. Air Settings

- a) change of air in the work space must be good.
- b) The air temperature must be conditioned setting

3. Lighting

- a) The setting and use the right light source
- b) The work space sufficient light

4. Use of Work Equipment

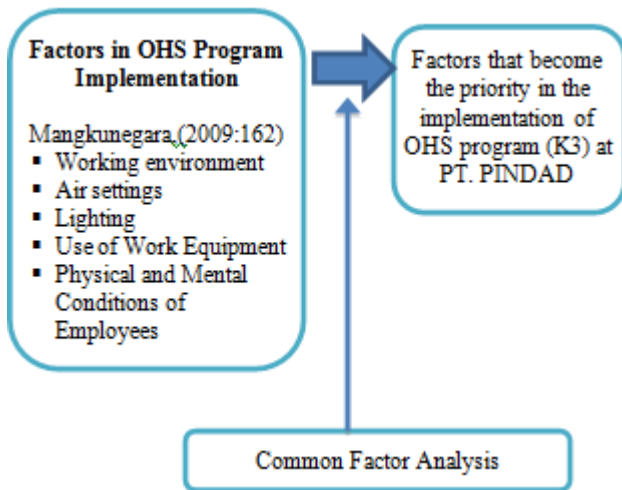
- a) Safety equipment must be good and decent work.
- b) Use of machinery and electronic device should be with a good safety.

5. Physical and Mental Conditions of Employees

- a) Tools senses and stamina employees should be stable.
- b) Emotions employees should be stable, high work motivation, attitude and careless employees not enough knowledge in the use of working facilities, especially working facilities that carry a risk of danger.

However, in practice it is possible the constraints e.g. limited manpower, funds, and other facilities both in quantity and quality, irregularities in the implementation of tasks and responsibilities (Ardana 2012: 211). With the passage K3 program properly could reduce the company's losses as financial loss, loss of personal, higher insurance premiums, exposure to fines and penalties and social responsibility (Marwansyah, 2010: 378).

Based on the description above, it can be described as the following framework:



3. Results and Discussions

Results showed that the visible presence of placement ranking factors are a top priority in the implementation of the program of Occupational Safety and Health (K3) on the production employees the Ministry of Railways Means (Sarka), Division of Industrial Engineering and Services (Mijas) At PT. PINDAD (Persero) Bandung formed from factor analysis. These factors among others from rank 1 to 5 i.e. illumination setting, physical and mental condition of employees, a state of the working environment, air setting, use of work equipment. Here is the discussion of each factor into the main top priority, in the implementation of Occupational Health and Safety program:

1. Lighting

Based on the values of the loading factor, variable illumination settings to 3 that generate the biggest loading factor that is 0.846, has amounted to 65.29% of variance%, with eigenvalue equal to 3.265. 3 variables to produce first biggest loading factor thus these variables is ranked one of the factors that a top priority in the implementation of K3 program in the Ministry of Railways Means (Sarka), Division of Industrial Engineering and Services (Mijas), PT. PINDAD (Persero) Bandung.

Factors such illumination settings include setting up and use of light in the workplace, information tailored to the needs, and adequate lighting. This fact shows that employees in the production department Means Railways (Sarka), Division of Industrial Engineering and Services (Mijas), PT. PINDAD (Persero) Bandung in doing work to produce and use the means of production must consider and require a light source and good lighting and adequate in doing his work indoors or plant as well as facilitate the employees to do the work. Most employees of the production department Means Railways (Sarka), Division of Industrial Engineering and Services (Mijas), PT. PINDAD (Persero) Bandung, feel the company has given light source and adequate lighting to the work space and plant in supporting the activities of the employee, then from that variable arrangement of lighting can occupy in rank 1 factors are a top priority in the implementation of K3 program in the Department Means Railways (Sarka), Division of Industrial Engineering and Services (Mijas), PT. PINDAD (Persero) Bandung.

But according to the results of observation, field observations and the results of the questionnaire answers in the Ministry of Railways Means (Sarka), Division of Industrial Engineering and Services (Mijas), PT. PINDAD (Persero) Bandung, there are rooms that are supposed to require and obtain special attention to lighting still looks less well to factors lighting arrangement in the room, so the room was dark. It can cause workplace accidents and hinder the production process in PT. PINDAD (Persero).

2. Physical and mental condition of employees

In addition to lighting settings, physical and mental conditions of employees generate loading factor which is equal to 0.830, has amounted to 65.29% of variance%, with eigenvalue equal to 3.265 as well. Variables to 5 produces a factor loading the second largest after the variable 3 thus variable to 5 ranks to two factors are a top priority in the implementation of K3 program in the Department of Means of Railways (Sarka), Division of Engineering Industry and Services (Mijas), PT. PINDAD (Persero) Bandung.

Factors physical and mental condition of these employees include sensing devices and stamina employees should be stable, emotionally employees should be stable, high work motivation, attitude and careless employees not enough knowledge in the use of working facilities, especially working facilities that carry a risk of danger. In general, physical and mental conditions of employees in doing the work should be kept as if the physical and mental conditions of employees unstable, motivation is low, employee attitudes sloppy, and not enough knowledge in the use of working facilities it will have a negative impact on the conduct of work, especially facilities work that carries the risk of danger.

Thus the production staff Means Railway Department (Sarka), Division of Industrial Engineering and Services (Mijas), PT. PINDAD (Persero) Bandung physical and mental conditions of employees are needed and considered in performing a job in order to avoid workplace accidents, and assist in the safety and health of employees. From the observations and assessments from the field at the time of the study at the Department of Means of Railways (Sarka), Division of Industrial Engineering and Services (Mijas), PT. PINDAD (Persero) Bandung, physical and mental condition factor of several employees still visible low work motivation visible from there are some employees who gathered at one table for a chat and do not do the job when the time was again a lot of work to be done and deadlines. It shows the work of some employee motivation is still low and the use of working facilities, especially facilities will be working to bring the hazards there are still some who do not know how to use it well. It should receive special attention again by the company to prevent accidents at work.

3. The situation of the work environment

For a state variable work environments generate loading factor which is equal to 0.824, has amounted to 65.29% of variance%, with eigenvalue equal to 3.265 as the variables previously. This results in a variable to 1 biggest loading factor to three so this variable was ranked 3 are a top priority in the implementation of K3 program in the Ministry of

Railways Means (Sarka), Division of Industrial Engineering and Services (Mijas), PT. PINDAD (Persero) Bandung.

A state of the working environment factors include the preparation and storage of dangerous goods should be taken into account safety, workspace is too crowded and congested be conditioned. In doing jobs such matters must be considered by the company in order to maintain the safety and health of employees.

For employees of the production department Means Railways (Sarka), Division of Industrial Engineering and Services (Mijas), PT. PINDAD (Persero) Bandung state of the place and the work environment is in conformity with what they expect and feel. While the results of field observations and a review of the state of a work environment factors, there are some factories and warehouses in the Department of Means of Railways (Sarka), Division of Industrial Engineering and Services (Mijas), PT. PINDAD (Persero) Bandung in the preparation and storage of dangerous goods safety still looks the goods are not neatly arranged and are not in place and seem to accumulate in corners of the room several factories and warehouses.

Examples of items that are not well-organized and seem to accumulate the example of materials or components for the production process in the message of the contractor has come and has not been collated and stored in a storage shed in accordance with the type and level of security, then the workspace of field observations and the results of the questionnaire distributed there are still some employees who answered less agree or disagree that the company already provides comfort workspace adapts to the needs of the workers. Still too dense, its lack of space in each of the parts stages in the manufacture of products, It looks normal but can cause discomfort during work. A study conducted in Australia in 2011 revealed the dangers of an employee who is in the workplace uncomfortable, will exacerbate mental health. In fact, the condition can be worse than those who do not have a job at all. (Source: Instagram (infia_health) Wednesday, 11 March 2015, 15:30)

4. Air Setting

Air arrangement generates a loading factor which is equal to 0,813, has amounted to 65.29% of variance%, with eigenvalue equal to 3.265 as the variables previously. 2 variables to produce the fourth largest loading factor so this variable was ranked 4 are a top priority in the implementation of K3 program in the Ministry of Railways Means (Sarka), Division of Industrial Engineering and Services (Mijas), PT. PINDAD (Persero) Bandung. Air regulatory factors include change of air in the workspace should be good, the air temperature must be conditioned settings. These things have been very well perceived and expected by the employee, if the change of air and a temperature of less good it will be bad for the employees to do the job, if the change of air and temperature conditioned setting it was very helpful in the implementation of the program of safety and health of employees,

But from observation, field observations, and the results of questionnaires distributed and answered by the employees

there are some remaining employees replied that the setting of air and temperature in the Department of Means of Railways (Sarka), Division of Engineering Industry and Services (Mijas), PT , PINDAD (Persero) Bandung, the company still has to pay more attention because the questions in the questionnaire mentioned facilities air conditioning in your work space is adequate, many answered by some employees less agree and disagree, and indeed it appears that in the work room feels very heat when there is no air conditioning in the workspace makes workers may feel uncomfortable at work. When workers are not comfortable while working that will make their work motivation decreases and can cause accidents, occupational safety and health impaired and inhibits the production process.

5. Use of work equipment

While the use of work equipment generates a loading factor which is equal to 0.722, has amounted to 65.29% of variance%, with eigenvalue equal to 3.265 as the variables previously. Variables to 4 produces value loading factor lowest among the variable-variables before, and therefore this variable can be said to be the lowest priority value among the others in the implementation of K3 program in the Department of Means of Railways (Sarka), Division of Engineering Industry and Services (Mijas) , PT. PINDAD (Persero) Bandung.

Employees have not felt the impact of the factors effective implementation of K3 program use work equipment made by the company. Thus this variable is said to be the factors that most low priority level according to production employees of the Ministry of Railways Means (Sarka), Division of Industrial Engineering and Services (Mijas), PT. PINDAD (Persero) Bandung.

Then from the observation, field observations, and the results of the questionnaire of factors the use of work equipment, there are some employees who answered the facility working equipment has a good condition and suitable to be used with an answer less agree and disagree and the company gives instructions and how to use the facilities working equipment so workers are not confused in doing the job with answers not agree and do not agree as well.

And according to the observations, there are still visible workers do not equip themselves with self-protection, it may be because they do not know how to use work equipment. It is not to be taken lightly, because if one worker does not equip themselves with the safety of work equipment that cause illness and accidents against him, such as the use of masks is important because in the factory remaining debris and small particles from the rest of the manufacture of products that can dangerous and often fatal if inhaled and ingested by workers. Then so also this factor is considered to be the lowest priority chosen by the employees because the company has not given particular attention to this factor.

4. Conclusion

Based on the results of the factor analysis-Fator are a top priority in the implementation of the program of

Occupational Safety and Health (K3) on the production employees the Ministry of Railways Means (Sarka), Division of Industrial Engineering and Services (Mijas), PT. PINDAD (Persero) Bandung it can be concluded as follows:

There are 5 factors that the top priority in the implementation of the program of Occupational Safety and Health (K3) on the production employees the Ministry of Railways Means (Sarka), Division of Industrial Engineering and Services (Mijas), PT. PINDAD (Persero) Bandung. Namely: a state of the environment, air handling, lighting arrangements, the use of work equipment, and physical and mental conditions of employees. All of these factors in the implementation of the program of Occupational Safety and Health (K3) on the production employees Department Means carriage of Fire (Sarka), Division of Engineering Industry and Services (Mijas) a top priority for employees because after the analysis of all these factors has a value > 0.5 , It shows the process of factor analysis can be run for the 5 variables and form factor of the same one, in which the 5 variables or factors that theoretically represents the unity of the application program K3 seen from eigenvalue of $3.265 \geq 1$. But the priority level it can be measured from the value of factor loading were obtained from factor analysis, so that these factors have ranked in priority to the implementation of the program Occupational Health and Safety (K3) on the production employees Department Means Railways (Sarka), Division of Engineering Industry and Services (Mijas). By ranking results as follows:

- 1) Rank 1 to 3 occupied by a variable with a value that lighting settings .846
- 2) Rank 2 occupied by the variable to 5, namely physical and mental conditions of employees with a value of 0.830
- 3) Ranking 3rd is occupied by the variable to 1 is a state where the working environment with a value of 0.824
- 4) Rank 4 is occupied by a variable into two, namely air setting with a value of 0.813
- 5) Rank 5 is occupied by the variable to 4, namely the use of work equipment with a value 0.722

All the factors have a variance in the amount of 65.29%.

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Author Profile

Mahendra Fakhri is researcher at the Faculty of Communication and Business, Telkom University.

Mahir Pradana is researcher at the Faculty of Communication and Business, Telkom University.

Nyndira Syafura is a bachelor student at the Faculty of Communication and Business, Telkom University.