

THE SAFETY AND ENVIRONMENT IMPACTS ON THE AUTOMOBILE INDUSTRY EMPLOYEES' WORKING CONDITIONS: A CASE OF RAYONG PROVINCE

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Abstract

The purposes of this research paper were to study the safety and environment impacts on the automobile industry employees' working conditions. The sample included 152 production employees. A questionnaire was designed to collect data and it is composed of four parts: working area, machine area, environmental area, and safety in working area. The rating scale was utilized in this questionnaire and frequency, mean, and standard deviation were used to analyze data. The findings revealed that there was a medium level of impact of working environment. For safety in working area, it was rated at 3.45 with the highest score on wearing protective gear. For working area, it was rated at 3.16 with the highest score on the warning sign with pictures. For machine area, it was rated at 3.15 with the highest score on the board showed how to use machine correctly. Finally, for the environmental area, it was rated at 3.01 with the highest score on the amount of dust in the area.

Keywords: Automobile Industry, Environment, Safety, Working Conditions

1. INTRODUCTION

The ACT of safety, health, and environment of working area 2001 stated that all the government units to set up the standard of management of the safety in working areas to protect all employees from harms and to create the same standard (Office of the Safety and Labors Protection, 2001). Normally, an organization must have many people working together, and therefore, rules and orders must be implemented to maintain the smooth process of the organization (Department of Labor Protection, 2000).

The level of satisfaction in the working areas is the total satisfaction of all employees received from working in the organization. High level of satisfaction often leads to high success of an organization (P. Wonganurot, 1999). This is a mixed method of social responsibility and value chain for environmental concerns. For example, Toyota Company has focused on the social responsibility and environmental concerns by purchasing only the raw materials that are environment friendly as well as to produce automobile with less waste and create the best environment for their employees (P. Aiemlaorpai, 2011). It is important for employees in factories and plants to be able to use equipment and machines correctly and safely. The rules of safety in factories and plants must be strictly obeyed. The managers who have direct responsibility to safety in the organization must have positive attitude on enforcing the rules of safety. The effectiveness of the safety enforcement has a correlation with the quality of safety enforcement with 93.5 (Thammarak Srimarut, 2014). Most of the accidents that occurred in factories and plants came from the failure to enforce the rules of safety correctly (S. Simachokdee, 1994). In terms of safety, many experts and researchers have discussed that which is the best way to increase the awareness to both employees and management level. Therefore, it is imperative to do the research to study the impact of safety and environment to the working condition of employees.

2. METHODOLOGY

This research was conducted in order to study the safety and environment impacts on the automobile industry employees' working conditions. The area of study was Rayong province since there were many factories and plants and the focus was on the production employees. The sample was calculated by using

Krejcie & Morgan table (S. Trikanon, 2000). The total population of employees in the production areas was 250 and 152 had answered the questionnaire. Likert-five scales was utilized and there were 21 questions within four parts. The questions were designed (M. Naraveerawuth, 2006). A questionnaire was designed to collect data and it is composed of four parts: working area, machine area, environmental area, and safety in working area. The first part of questionnaire included the questions of working areas. The questions included dirty area, unorganized stuff, undivided working areas, and signs to warn employees. The second part of questionnaire included machine areas. The questions included deteriorate machine, low quality machine, loud machine, poor maintained machine, and notice of how to use machine correctly. The third part of questionnaire included environmental of working. The questions included the heat from machine, level of light in the working areas, level of dust in the working areas, level of chemical expose in the working areas, and level of chemical smell in the working areas. The fourth part of questionnaire included safety. The questions included the process of working, the protective gears wearing during working, the knowledge of dust, noise, light, and strong smell, the horse-playing during work, the broken equipment and machine, sickness, and the dress code in workplace. The SPSS was utilized to analyze the data and mean and standard deviation were used to calculate the safety and environment impacts on the automobile industry employees' working conditions.

3. FINDINGS

The safety and environment impacts on the automobile industry employees' working conditions can be showed table I to table III.

Table 1. Impact on working areas

Item	Mean	Standard Deviation	Level of Opinion
Category			
1. Dirty floor and some obstacles on the floor	3.06	.89	Medium
2. Unorganized inventory and misplaced items	3.05	.89	Medium
3. Unmarked space and stack up inventory too high	2.75	.97	Medium
4. Signs and warning with pictures.	3.80	.613	High
Overall	3.16	.90	Medium

Table 1 shows means and standard deviations of four variables or categories. The means values can help to rank these variables from high to low as follows: 1) Signs and warning with pictures, 2) Dirty floor and some obstacles on the floor, 3) Unorganized inventory and misplaced items, and 4) Unmarked space and stack up inventory too high. The overall mean was 3.16 with 0.90 of standard deviation.



Fig. 1. Working Areas Process

Table 2. Impact from machines

Item	Mean	Standard Deviation	Level of Opinion
Category			
1. Deteriorate and out of date machines	2.72	.90	Medium
2. Low or poor quality machines	2.63	.93	Medium
3. Loud noise machines and equipment	3.61	.99	High
4. Low and no maintenance machines	2.94	.99	Medium
5. Sign and notice of how to use machine properly	3.86	.84	High
Overall	3.15	.73	Medium

Table 2 shows means and standard deviations of four variables or categories. The means values can help to rank these variables from high to low as follows: 1) Sign and notice of how to use machine properly, 2) Low and poor quality machine, 3) Low and no maintenance machine, 4) Deteriorate and out of date machine, and 5) Low and poor quality machine. The overall mean was 3.15 with 0.73 of standard deviation.

Table 3. Impact on environmental of working areas

Item	Mean	Standard Deviation	Level of Opinion
Category			
1. Are you exposed high heat from the machine?	3.98	1.00	High
2. Are you exposed to bright light in the workplace?	3.40	.82	Medium
3. Are you exposed to too much dust in the work place?	3.99	1.05	High
4. Are you exposed to chemical in the work place?	3.68	.613	High
5. Are you exposed to strong smell in the workplace?	3.69	.94	High
Overall	3.01	.98	Medium

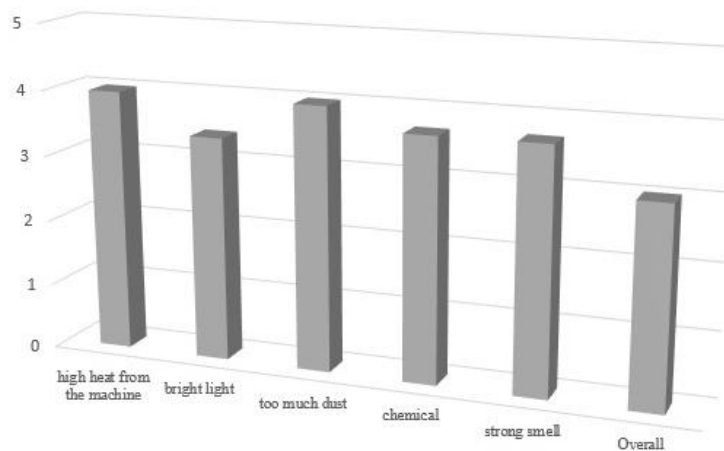


Fig. 2. Impact on environmental of working areas

Table 3 shows means and standard deviations of four variables or categories. The means values can help to rank these variables from high to low as follows: 1) Are you exposed to too much dust in the workplace? , 2)

Are you exposed to high heat from the machine? , 3) Are you exposed to strong smell in the workplace? , 4) Are you exposed to chemical in the workplace? , and 5) Are you exposed to bright light in the workplace? The overall mean was 3.01 with 0.98 of standard deviation.



Fig. 3. Environment working Areas

Table 4. Impact on environment and safety areas

Item	Mean	Standard Deviation	Level of Opinion
Category			
1. Did you follow the rules and process of working?	4.11	.72	High
2. Did you wear protective gear?	4.12	.79	High
3. Did you have any training of dust, noise, light and strong smell?	3.45	.92	High
4. Did you horse-play during work?	2.27	1.10	Low
5. Did you inform your supervisor of any broken machine?	4.09	.76	High
6. Did you inform your supervisor of any sickness from work?	3.99	.84	High
7. Did you wear proper uniform?	2.16	1.24	Low
Overall	3.45	.91	Medium

Table 4 shows means and standard deviations of four variables or categories. The means values can help to rank these variables from high to low as follows: 1) Did you wear protective gear? , 2) Did you follow the rules and process of working? , 3) Did you inform your supervisor of any broken machine? , 4) Did you inform your supervisor of any sickness from work? , 5) Did you receive any training on dust, noise, light and strong smell? , 6) Did you horse-play during work? , and 7) Did you wear proper uniform? The overall mean was 3.45 with 0.91 of standard deviation.



Fig. 4. Boiler Maintenance

4. DISCUSSION

In regards to the findings, it revealed the safety and environment impacts on the automobile industry employees' working conditions. In terms of safety in the workplace, it was rated at medium level. This finding concurred with the findings of Saowanee Paumung which stated that the safety in working place was rated as medium. Moreover, Surachai Traisiranon found that the perception of employees in factories and plants about the safety rules and regulations were very high (Witthaya Mekhum, 2009). This is consistency with the finding from this research that employees rated high in the question, "Did you have any training regarding of dust, noise, light and strong smell? It is imperative that employees must have a proper training and be able to handle the emergency situation that might occur in any factory and plant. In addition, Efat Lali Dastjerdi stated that it is important to manage the risk and the proper safety rules and regulations can reduce the expenses from unnecessary accidents (E. L. Dastjerdi, et. al., Vol. 7, 2013).

5. FUTURE STUDIES

Since this research used mainly qualitative method to find the process of obtaining the findings, the major limitation came from the incomplete information. Therefore, a mixed method of qualitative and quantitative method might better find the information and to obtain answers that represents the overall opinion of both local customers and company's employees. Therefore, the findings of this study may not be generalized beyond this sample group. In addition, future research should use random sampling technique with a large and diverse representative.

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