



Case Report

Level of Safety Awareness of the Management and the Workers at the Assembly Area in a Sewing Company

Leilani A. Gonzales, Jimmy M. Teodoro

College of Engineering, University of Perpetual Help System Laguna, Biñan City, Philippines

Email address:

lhei1205@yahoo.com (L. A. Gonzale)

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Abstract: The study aims to show the level of safety awareness of the management and the workers in the assembly area in a certain sewing company which presents the structured and systematic approach that will help the management of the company to monitor and measure the safety performance, productivity and quality of work of the employees. Safety Management is a formal risk management framework to improve safety, thus organizations would have systems for hazard identification and risk management, safety targets and reporting processes, procedures for audit, investigations, remedial actions, and safety education. The researchers utilized the descriptive method with the questionnaire as the major source of data from the 11 regular workers who are at the assembly area which purposively selected. The four-point Likert scale, Weighted mean, Pearson-R correlation coefficient and T-test were utilized to treat data. Irregularities on the safety management of the company have found out. This leads to an insufficient safety management within the company. The level of awareness on safety management should be given an importance by the management because it gives a great impact on the productivity of the personnel, and with that the quality/maintenance of the safety management has a great contribution to the productivity of the personnel.

Keywords: Safety Management, Assembly Area, Work Quality

1. Introduction

Safety is one of those things that you don't want to worry about [3]. It's hard to focus on the tasks when you have to be concerned about threats of injury or harm. The safety management of workers is a value-added proposition and by taking a safety-integrated process improvement approach, the organization will be able to manufacture products and/or deliver services faster, better, cheaper, and safer. That is why in many companies, the safety management of the workers is being applied to ensure the goals set include target dates for completion, responsibilities appropriately assigned as well as the resources required to meet the company's needs.

Every company has their own rules and regulations and even tradition about safety management of the workers. The primary goal of safety management of workers is to know how well management effectively communicates safety through various organizational structures and to help connect the dots between business objectives and safety management. There is

one law in the United States that affects nearly every individual who works for an employer—the Occupational Safety and Health Act (OSHA) of 1970. In the intervening years, this act has had a profound and positive impact on safety activities in the country. OSHA has helped cut workplace fatalities by nearly 60% and occupational injury and illness rates by nearly 40%. In the same time frame, employment in the United States has doubled to more than 115 million workers at 7.2 million work sites [20]. In the Philippines, it is required to have and maintain a safe work environment for the safety management of the worker. In a recent survey of Occupational Safety and Health (OSH) in Metro Manila, with regard to safety and health management, 200 establishments or 40% claimed that they have a written safety and health policy and with regard to the use of personal protective equipment (PPE), very few companies use PPE. (<http://www.oshc.dole.gov.ph/140/>, 2002)

With regards to safety management it is observed that the employees are not properly aware for possible of danger that

they may encounter in the area. Lack of PPE (Personal Protective Equipment) was also observed. According to some workers some of them had encountered some injuries due to insufficient knowledge about safety rules and procedures. This will require immediate attention because setting aside safety management can cause more injuries to workers and unproductivity of the workers.

There was no study yet conducted about the safety management of workers from the company ever since. Realizing the significant contribution of safety management among the workers prompted the researchers to analyze the result. This study serves as a way to predict the value of safety management of worker and for the further improvement of the company.

The study will determine the level of safety awareness of the management and workers at assembly area in the sewing company. Specifically it will seek to answer the following sub-problems: (1) What is the level of satisfaction of among the personnel on the safety management in the assembly area?; (2) To what extent is the safety management effective in meeting the needs of the employees in terms of safety training programs and safety printed materials?; and (3) Is there a significant relationship between safety management and performance of personnel in the areas of productivity, efficiency and quality of work?

The effect of safety management is sometimes unnoticed in the productivity of manufacturing companies, managers and employees. Safety management will be a great help to the respondents of the study and to the researchers. This will help boost the safety working environment of the company and productivity. Also, this will serve as a useful information guide on proper safety guards. The study will be the way to gain and enhance the knowledge about the concept of safety management.

Figure 1 shows the conceptual framework which provides direction for the development of the safety management of the company. To have an adequate safety management the following components must be done; assessment of overall practice of the safety management at the company, the development of aims and strategies, engage in reflecting practice, and collaborating with workers in important. This will not be successful without knowledge, disposition, skills and lifelong learning.

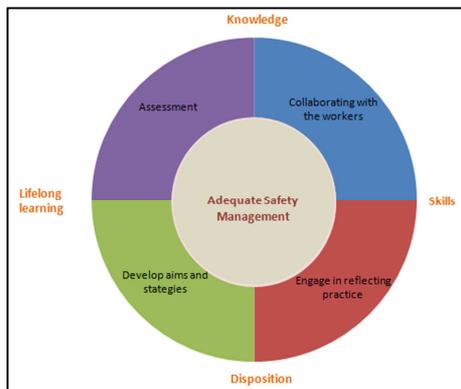


Figure 1. Conceptual Framework.

Safety Management is a formal risk management framework to improve safety. Having a safety management, organizations would have systems for hazard identification, risk management, safety targets, and safety education. The figure 2 shows the independent variable, intervening and dependent variables. The independent variable which the company has control over, choose and can manipulate the safety rules, PPE, and safety training program. These are the materials needed to attain the output which are the dependent variables; it is something that is dependent on other factors. In short the dependent variable is the results gathered after inputting the independent variables and implementing the intervening variable which is the implementation of adequate safety management; this intervening variable gives support for the independent and dependent variable.

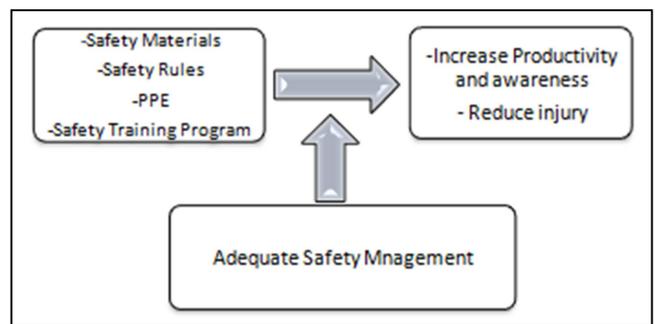


Figure 2. Operational Framework.

A review of the safety climate literature revealed that employee’ perceptions of management’s attitudes and behaviors towards safety, production and issues such as planning, discipline etc. was the most useful measurement of an organization’s safety climate. The research indicated that different levels of management may influence health and safety in different ways, for example managers through communication and supervisors by how fairly they interact with workers [19]. Thus, the key area for any intervention of an organization’s health and safety policy should be management's commitment and actions towards safety. Ultimately management’s attitudes and behavior in terms of safety influence many aspects of safety behavior including; the success of safety initiatives, the reporting of near-miss occurrences, incidents and accidents, employees working safety, e.g. nurses compliance with universal precautions, employees taking work related risks, influencing production pressures, implementing safety behavior interventions, health interventions, the effectiveness and credibility of safety officers, and the effectiveness and credibility of safety committees [18].

The key to reducing safety and health hazards is an effective safety management program. In turn, the cornerstone of a successful safety management program is management commitment and employee involvement—forming a team that more and more often includes the facility manager as an integral player [16].

A clear occupational health and safety policy plays an important role in reducing accidents and injuries at work. A

good practice of safety management in an organization should demonstrate better task performance and citizenship behavior which at the end of the day increases productivity. The use of safety management systems for every department in an organization can offer employees with a clear accepted code system of rules or procedures about the safe operation of machinery, various devices and appropriate behaviors [13]. Looking at the effect on occupational health and safety policy on employees' performance, [14] in his literature added that when workers understand the health and safety rules and procedures of their job and the tools use for working, it helps them to work effectively and efficiently resulting in better performance of employees.

An extensive review of safety training studies conducted [4], found that the effectiveness of safety training is dependent upon the success of other aspects of a workplace safety program (worker feedback, organizational practices, management commitment to safety, etc.). Similarly, other studies stress that safety training should not be viewed as the sole element of a health and safety management program. According to researches [10-11] emphasize that effectiveness of safety training can be enhanced with complementary interventions such as performance feedback, and goal-setting, and that training must be coordinated with other aspects of a health and safety program. Although no relationship was detected between a worker's safety-related events (near misses) and his risk tolerance score, further investigation may be useful. The workers involved in this research do not routinely track near misses; the company safety program has not focused on these events as part of an incident prevention program. Examination of risk tolerance, in conjunction with other safety program aspects (safety communication, management commitment to safety, etc.) at a worksite that actively tracks and manages near miss events may produce different results.

Workers with dependents are significantly less risk tolerant than their co-workers without dependents, indicating that some components of an employee's non-work life can affect his tolerance for work-related risk. This conclusion is consistent with a study [2], which found that demographic characteristics affect financial risk tolerance. Another study [7] demonstrated that health and safety measures have a positive impact not only on safety and health performance, but also on company productivity. In addition, although experience shows that in many cases proof of profitability can be given, it might be rather difficult in a certain number of cases to develop solid evidence. The authors also state although the literature survey was fairly limited, research findings support the existence of an important link between a good working environment and the performance of a company. Thus, the quality of a working environment has a strong influence on productivity and profitability. While when it regards to the efficiency of the workers the one that has a strong influence to it is their morale attitudes towards to work.

Safety training program consists of the areas in product knowledge, the content and the use of PPE, and emergency preparedness [8]. And work performance of personnel was

measured in terms of productivity, efficiency, quality of work, morale and attitudes, and attainment of target goals. And based on study it proves that; Safety training program is said to be a determinant to improve employee's performance.

Another study aimed to make an evaluation of safety practices in car air-condition repair shops [1]. To undertake researchers on the condition, practices and facilities affecting the operation of the repair shops engage in the service of car air-con system. The main purpose of the study is to evaluate the repair shop if they are complying with the standard practices these researchers were able to denote the safety practices exhibited or being followed as guidance by technicians on a car air-condition repair shop. Based on the study, shop owners do not follow safety policies and procedures and that workers were lacking of proper training and knowledge regarding the operation which poses a threat to their safety and health. That's why the researchers recommended the company to implement training for familiarization about the process, proper design of establishment have and to provide precise PPE's for the workers that may help to utilize the quality of work.

All the related literatures and studies stated are of great help for the researchers in conceptualizing the study. The key to reducing safety and health hazards is an effective safety management program [12]. And incorporating safety management systems into normal business operations does appear to reduce accidents and improve safety in high-risk industries. This literature explains that safety management system provides for goal setting, planning, and measuring performance. And that effective safety management must take into account the organization's specific structures and processes related to safety of operations.

Related studies reviewed stated that the effectiveness of safety training is dependent upon the success of other aspects of a workplace safety program (worker feedback, organizational practices, management commitment to safety, etc.) [5]. This study proves that safety planning and the implementation of safety management procedures are the next key steps in the processes designed to lessen and contain risk in the operations. Once these controls are ready or implemented, quality management techniques can be utilized to ensure that they achieve the intended objectives and where they fail to improve them.

Safety training should not be viewed as the sole element of a health and safety management program [10-11]. These studies emphasize that effectiveness of safety training can be enhanced with complementary interventions such as performance feedback, and goal-setting, and that training must be coordinated with other aspects of a health and safety program.

2. Methods

Descriptive method of research was utilized with the questionnaire as the major source of data from the respondents of the study. The descriptive method is a general quantitative method of research, generally employed for status trend

studies, describing specifically the prevailing characteristics of the respondents of the study regarding the safety management of the workers [4]. Descriptive research is tenable researches the purpose of which is generated in order to test the hypothesis or answer questions concerning the current status of the subject of the study in terms of safety management of the certain company.

The respondents of the study were the 11 regular workers purposively selected and who are working at the assembly area of a certain sewing company.

Direct observation and questionnaires were used to obtain data. Actual observations in the assembly area of the sewing company were conducted to see the present condition of the safety management in the said area. Conducting an observation in the area will give the researchers the definite impression on what's happening in the assembly area. The researchers utilized empirical data derived from set of

questionnaires to attain the purposes of the study. The following questionnaires were used as definite source of data. First, is to determine the level of satisfaction on safety management, then the effectiveness of safety management in meeting the needs of the personnel, then the personnel work performance in terms of productivity.

Likert scale is a psychometric response scale primarily used in questionnaires to obtain participant's preferences or degree of agreement with a statement or set of statements. Respondents were asked to indicate their level of agreement with a given statement and with a scale of 1 to 4, were 4 is the highest and 1 is the lowest. Weighted mean was used to determine the final average of each data points contributing different weight. Pearson R Correlation analysis was used to determine the relationship between the two variables, or how one variable goes with the other. And T-test was used to determine the significance of the correlation.

3. Results and Discussion

Table 1. Satisfaction Level with regards on Safety Management at the Assembly Area.

SAFETY MANAGEMENT	VS	S	N	US	TOTAL	WM	VI	Rank
1. Satisfaction on the safety management of the company	0 0%	4 36.36%	7 63.64%	0 0%	11 100%	2.36	N	3
2. Satisfaction on the PPE (Personal Protective Equipment) given by the company	0 0%	3 27.27%	8 72.73%	0 0%	11 100%	2.27	N	2
3. Satisfaction on the safety rules and regulation of the company	1 9.09%	6 54.55%	4 36.36%	0 0%	11 100%	2.73	S	1
4. Contentment to the knowledge gained from the safety training program	0 0	3 27.27%	8 72.73%	0 0%	11 100%	2.27	N	2

Average Weighted Mean = 2.41 = Neutral (*verbal interpretation*)

Legends: VS - Very Satisfied V - Satisfied N - Neutral US – Unsatisfied

WM - Weighted Mean VI - Verbal Interpretation

Table 1 shows the responses of the personnel on their satisfaction level with regards to safety management at the assembly area. Indicator 3 which states the satisfaction on the safety rules and regulation of the company obtained a weighted mean of 2.73 interpreted as satisfied. Indicator 2 and 4 “satisfaction on the PPE (Personal Protective Equipment) given by the company and contentment to the knowledge gained from the safety training program” obtained a weighted

mean of 2.27 ranked second, verbally interpreted as neutral. Indicator 1 “satisfaction on the safety management of the company” obtained a weighted mean of 2.36 ranked third, verbally interpreted as neutral. Responses of the personnel on their satisfaction level with regards on safety management at the assembly area obtained an average weighted mean of 2.41 interpreted as neutral.

Table 2. Effectiveness of Safety Management in Meeting their Needs in terms of Printed Materials.

PRINTED MATERIALS	VE	E	N	I	TOTAL	WM	VI	Rank
1. Shows signage & pictures	0 0%	0 0%	5 45.45%	6 54.55%	11 100%	1.45	I	2
2. Shows features on Unsafe Acts/Incidents	0 0%	0 0%	4 36.36%	7 63.64%	11 100%	1.36	I	3
3. Gives printed handouts for newly hired personnel	0 0%	0 0%	6 54.55%	5 45.45%	11 100%	1.55	N	1

Average Weighted Mean = 1.45 = Ineffective (*verbal interpretation*)

Legends: VE - Very Effective E - Effective N - Neutral I – Ineffective

WM - Weighted Mean VI - Verbal Interpretation

Table 2 shows the responses of personnel on the effectiveness of safety management in meeting their needs in terms of printed materials. The responses of the personnel with regards to the effectiveness of the safety management in terms of printed materials fall only in two categories which are

the “neutral” and “ineffective”. Indicator 3 which states the gives printed handouts for newly hired personnel obtained a weighted mean of 1.55 ranked first and interpreted as neutral. Indicator 1 “shows signage & pictures” obtained a weighted mean of 1.45 ranked second, verbally interpreted as

ineffective. Indicator 2 “shows features on Unsafe Acts/Incidents” obtained a weighted mean of 1.36 interpreted as ineffective. Responses of personnel on the effectiveness of

safety management in meeting their needs in terms of printed materials obtained an average weighted mean of 1.45 interpreted as ineffective.

Table 3. Effectiveness of Safety Management in Meeting their Needs in terms of Safety Training Program.

SAFETY TRAINING PROGRAM	VE	E	N	I	TOTAL	WM	VI	Rank
1. Orientation on the use of PPE	0 0%	0 0%	4 36.36%	7 63.64%	11 100%	1.36	I	4
2. Informed on the safety hazards of the product	0 0%	1 9.09%	4 36.36%	6 54.55%	11 100%	1.55	N	3
3. Orientation on newly hired personnel	0 0%	4 36.36%	6 54.55%	1 9.09%	11 100%	2.27	N	2
4. Awareness on what to do during emergency	2 18.18%	7 63.64%	2 18.18%	0 0%	11 100%	3.00	E	1

Average Weighted Mean = 2.05 = Neutral (*verbal interpretation*)

Legends: VE - Very Effective E - Effective N - Neutral I – Ineffective

WM - Weighted Mean VI - Verbal Interpretation

Table 3 shows the responses of personnel on the effectiveness of safety management in meeting their needs in terms of safety training program. Indicator 4 which states the awareness on what to do during emergency obtained a weighted mean of 3.00 ranked first and interpreted as effective. Indicator 3 “orientation of newly hired personnel” obtained a weighted mean of 2.27 ranked second, verbally interpreted as neutral. Indicator 2 “informed on the safety hazards of the products obtained a weighted mean of 1.55 interpreted as neutral. Responses of personnel on the effectiveness of safety management in meeting their needs in terms of safety training program obtained an average weighted mean of 2.05 interpreted as neutral.

Table 4. Relationship of the Safety Management and Performance of the Workers in terms of Productivity.

	REJECTED (There is a significant relationship)	ACCEPTED (There is no significant relationship)
Relationship between safety management question no1 (Are you satisfied with the safety management of the company?) and productivity question no. 1 (Perform more than what is required of your work)		1
Relationship between safety management question no.2 (Are you satisfied with the PPE given by the management?) and productivity question n. 1 (Perform more than what is required of your work)	1	
Relationship between safety management question no.3 (Are you satisfied with the rules and regulations in the company with regards to the safety?) and productivity question no. 1 (Perform more than what is required of your work)		1
Relationship between safety management question no.4 (Are you contented with the knowledge given by the safety training program?) and productivity question no. 1 (Perform more than what is required of your work)	1	
Relationship between safety management question no.1 (Are you satisfied with the safety management of the company?) and productivity question no. 2 (Accomplishes target and desired goals at prescribed time)	1	
Relationship between safety management question no.2 (Are you satisfied with the PPE given by the management?) and productivity question no. 2 (Accomplishes target and desired goals at prescribed time)	1	
Relationship between safety management question no.3 (Are you satisfied with the rules and regulations in the company with regards to the safety?)and productivity question no. 2 (Accomplishes target and desired goals at prescribed time)		1
Relationship between safety management question no.4 (Are you contented with the knowledge given by the safety training program?) and productivity question no. 2 (Accomplishes target and desired goals at prescribed time)	1	
Relationship between safety management question no.1 (Are you satisfied with the safety management of the company?) and productivity question no. 3 (Shows awareness in safety and health)		1
Relationship between safety management question no.2 (Are you satisfied with the PPE given by the management?) and productivity question no. 3 (Shows awareness in safety and health)	1	
Relationship between safety management question no.3 (Are you satisfied with the rules and regulations in the company with regards to the safety?) and productivity question no. 3 (Shows awareness in safety and health)		1
Relationship between safety management question no.4 (Are you contented with the knowledge given by the safety training program?) and productivity question no. 3 (Shows awareness in safety and health)	1	
TOTAL	7	5

Table 4 summarizes the results of computed correlations and t-test (see table on page 5). When it comes in determining the significant relationship between safety management and personnel work performance in terms of productivity, the

result shows that out of 12 computed correlations and t-test 7 are rejected which means “there is a significant relationship”, while the remaining 5 are accepted which means “there is no significant relationship”. Since the rejected results are greater

than accepted results, the rejected results must be considered so the finding shows that there is a significant relationship between safety management and personnel work performance in terms of productivity.

An observation was conducted at the assembly area of sewing company. When the researchers toured around on the vicinity of the assembly area they observed that there is no signage or picture of the right wearing of PPE, also there's no signage of the right lane or pathway for the people. The wires are not properly arrange, it's just spread out on the floor that can cause for the employee to get entangled and might cause an accident. It can also cause delay when the jack lift is being use the workers should fix the wires first to have a way in the jack lift.

It is also observed that the wiring of the lights of the working tables are just hanging above the heads of the workers, and some wires are damaged that can ground the workers while working. Also the tables are wet by the oil licking from the parts of the machine and they are just using a piece of carton box as its mantle. And some parts of the floor is also wet by the oil that there's no sign of an slippery area so that when the workers step in that area they might slipped and fall down. There is no garbage storage inside the assembly area, they just putting the waste materials in the side of the assembly area and the garbage stay there until the working hours end. Also the electric fans are so dirty that the wheels of the fan can't even see due it's covered by the dust.

Responses of the personnel on their satisfaction level with regards on safety management at the assembly area obtained an average weighted mean of 2.41 interpreted as neutral. The responses of the personnel with regards to the effectiveness of the safety management in terms of printed materials fall only in two categories which are the "neutral" and "ineffective". Responses of personnel on the effectiveness of safety management in meeting their needs in terms of printed materials obtained an average weighted mean of 1.45 interpreted as ineffective. Responses of personnel on the effectiveness of safety management in meeting their needs in terms of safety training program obtained an average weighted mean of 2.05 interpreted as neutral.

The researchers found out that there is a significance relationship between safety management and performance of the workers in terms of productivity. Since 7 out of 12 computed correlations and t-test are rejected, which means there is a significant relationship, compared to the 5 out of 12 accepted results, which means there is no significant relationship.

In the light of the above significant findings of the study, the following conclusion can now be made: (1) The researchers found out that the level of satisfaction of personnel on safety management in assembly area of a sewing company is neutral with an average weighted mean of 3.41. Therefore it only shows that the workers are neither satisfied nor unsatisfied about safety management of the company at assembly area, its either the employees are not aware about safety rules and regulation and safety materials like PPE; (2) The effectiveness of the safety management in meeting the needs of the workers

in terms of printed materials fall in the category of ineffective with an average weighted mean of 2.45. Therefore, printed materials like safety signage, pictures, printed handouts and features on unsafe acts/incidents were sufficient. In terms in effectiveness of safety management with regards to the safety training program fall in the category of neutral with an average weighted mean of 3.05. Therefore when it comes to the safety training program the workers are either not properly aware or not contented about safety management with regards to the orientation on the use of PPE, informed on the safety hazards of the product, orientation on newly hired personnel, and awareness on what to do during emergency; and (3) There is a significant relationship between safety management and performance of the workers in terms of productivity. Therefore having a sufficient or insufficient safety management can give a great impact on the productivity of the personnel, that the quality/maintenance of the safety management has a great contribution to the productivity of the personnel.

4. Conclusion

It only shows that most of the workers are not satisfied about safety management in assembly area, its either that the employees are not aware about safety rules and regulation and safety materials. Printed materials like safety signage, pictures, printed handouts and features on unsafe acts/incidents were sufficient. When it comes to the safety training program the workers are not properly aware and not contented about safety management with regards to the orientation on the use of PPE, informed on the safety hazards of the product, orientation on newly hired personnel, and awareness on what to do during emergency. There should be sufficient safety management so as to have a great impact on the productivity of the personnel, that the quality/maintenance of the safety management has a great contribution to the productivity of the personnel.

Recommendations

In the light of the above significant findings and conclusions, the following recommendation are hereby endorsed. First, for the level of satisfaction of the personnel with regards on the safety management at assembly area, the researchers recommend the company to properly orient people on what is safety management all about and to improve/increase the features or topics of the safety training program like safety awareness, orientation on proper use PPE, informed safety hazards of the product and safety rules and regulation. Continuous application of good practice of safety management such as: (1) Strict implementation of proper PPE such as mask, hair cap, ear plug, appropriate gloves for the process, safety shoes; and (2) Proper ventilation of the area in terms of cleanliness, air supply, lightning.

For the effectiveness of the safety management in meeting the needs of employee in terms of safety printed materials, the company should provide adequate Printed Safety Materials such as: (1) Signage/labels for proper location of finish

products, materials and waste, and road signage for proper pathway of people and jack lift; (2) Pictures of unsafe and safe acts to avoid workplace injuries and illnesses and to know what to do and what not to do; and (3) Printed assembly procedure to utilize the quality of work. This is in order to demonstrate better task performance and citizenship behavior with in the area. For the effectiveness of the safety management in meeting the needs of employee in terms of safety training program, the company should conduct a safety training program before the new workers starts their job. This safety training program will help workers to improve their sensitivity to danger, and this will also provide them with adequate basic safety training in order to effectively perform assigned duties and task in a safer manner, thus the key to reducing exposure to safety and health hazard for an effective safety training program.

In terms of significant relationship between safety management and personnel work performance with regards to productivity, the company must have a strong management commitment and employee involvement to have a successful safety management. It requires safety committee, which has a member working under assembly area which will report the safety and hazard conditions in the area/vicinity. In order to attain that the company should implement routine/everyday audit or checking for the condition of the workplace and of the workers, this must be performed an hour after the start of working time and an hour before the end of working time. Implementation of 5s may also a help for increase in productivity, quality and safety improvement.

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