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Work-Related Risks, Facts and Findings: A Study of a Manufacturing Firm in India

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ABSTRACT

This study investigates the work-related risks, facts and findings in a manufacturing firm. The study is based on the 102 respondents from an automobile manufacturing firm working in Haryana, India. Risks associated in the manufacturing sector are i.e. fire, chemical exposure, statutory requirement, electrocution, noise and temperature. It also involved the resolved and unresolved risk. This study is also focused on consequences related to workplace risks.

Keywords: environment, hazards, risks, safety, workplace

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INTRODUCTION

With the introduction of globalization, it is mandatory for the organizations to follow the health and safety laws because organizations need to do hefty investment on it [1]. According to ref. [2], organizations not even prevent the employees from the accidents, but also find the reasons of the accidents at the workplace. Flenton [3] stated those workplace injuries and deaths are increasing due to improper methods of production. Work related illness and accidents are comprehensive problems for all the organizations as the individual as well as the whole society suffer [4]. Flenton has the opined that as the industries are growing at the escalated rate due to improper method of production, workplace injuries and deaths are increasing. Management unconscious about the safety and law of compliance is one of the major reasons of the accidents at the workplace [5]. On the basis of Bhopal gas disaster, researcher concludes the organization should have considerable investment in the health and safety issues like proper work area, standardized machinery and equipment, proper training for workers, etc.

Objectives of the Study

The main objective of the study is to assess the risks and facts related to safety in manufacturing firm operating in India. Further it aims to find the high risk, moderate risk, and low risk in the firm.

REVIEW OF LITERATURE

Fire

Fire is serious risk related to businesses. It can injure the people as well as kill the employees destroy business premises, machinery and the stock of material (raw material, semi-finished goods and finished goods). Employer responsible should provide the directions, information and training for the fire protection. Adequate fire precautions should be available at the right place and the right time [7]. Research has shown that proper arrangement related to fire by the management leads to improve the performance [8]. Workplace risk management practices are involved in providing appropriate training to right person at the right time. In a survey of

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manufacturing companies, Beriha et al. [9] have found that workplace risk i.e. is indirectly related to safety performance that influences organization performance in the Nigerian manufacturing industry. Fearnley and Raj [10] have pointed out the effective risk management control systems i.e. inspection, communication, plant change, plant design which lead to prevent the accidents and consequently improve the safety and economic performance of the organization.

Chemical Exposure

Previous empirical studies support for the view point that investment in the machinery and equipment's depends upon the knowledge and experience of management through which positively improve the production process as well as firm performance [11, 12]. Delong and Summers [11] have linked the firm's economic outcomes through their influence on machinery and equipment investment. All this has resulted in increased investment in machinery and equipment that will increase the firm performance [13]. Sohn et al. [14] have revealed that investment decision that depends on knowledge and skills of executive and firm technology level are likely to positive affect the firm performance. They have stated that constant renewal may have the strong.

Safety measures facilitate in reduction of the occupational risk, accidents and illness. It also aware the workers about different hazards and provide proper solutions about the hazards. Employer should also charge the penalties for the mistakes at the workplace. All these safety measures will definitely improve the safety performance [15].

Statutory Requirements

Statutory requirement are those requirements which are applicable by virtue of law enacted by the governments. A significant body of research has examined the impact of training related to health and safety practices on firm performance. The studies have confirmed that tactically oriented laws and policies are associated both productivity and organization performance [16]. Cheramie et al. [17] have also stated rules and laws that has the more influence on managerial performance. Investment in health and safety training improves the skills and satisfaction level of employees that in turn improves productivity [18]. Training also helps to reduce the work stress and anxiety of job [19]. Pfeffer [20] has revealed that laws and polices easily help to achieve the goal and gaining the advantages on the competitors. Legislation and laws creates the culture of learning for the employees in the organization and ultimately gets the return on the investment [21].

Electrocution

Electrocution is a death caused by electric shock, electric current passing through human body. Human error, poor operational procedure, and delay in decision taken by the management are the main reasons for the accidents i.e. Electrocution at the workplace [22]. According to ref. [23], risk analysis has a positive effect on control the accidents at the workplace. Aires et al. [24] have established a negative relationship between safety design and accidents through their study. Implementation of safety design has positive implication for organization such as decrease the accidents; injuries electrocution develops the work quality and life. Faber and Stewart [25] have pointed out that hazards management plans and consideration of risk procedure not only avoid the accidents and hazards but also increase the worker capability and firm performance.

Noise and Temperature

According to ref. [26], reasons of stress at work are loss of job, sitting for the long periods, lack of safety, and autonomy. Topper [27] Believed that the main reason of noise at work is over crowed. Similarly, Higgins [28] has found that improper

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working conditions, poor work environment are the other reasons for noise. Heslop et al. [29] have emphasized that stress and production activities have the cause and effect relationship. Stress can work as motivating factor if the worker manages the strain of job at work. Working conditions i.e. noise and temperature affects the individual life in both way personally and professionally. Stressed employee takes wrong decision and negative rapport with the coworker. Ferrie et al. [30] have pointed out that job security and proper employment lead to production of quality and improve economic performance of firms.

Improper Planning

Proper planning refers to a range of activities adopted by the organization to improve the performance of employees and units with the final function of improving organizational efficiency [31]. Sexten and Van Auken [32] have revealed that an organization with the improper planning navigates the employees' activities into the wrong direction. Even Flapper et al. [33] have identified prevention plan as the single and strongest forecaster of firm performance. It has become clear that procedure and tools of proper planning improve the efficiency of firms. Performance assessment system can decrease the human error and also reduce the chances of accidents [34]. Prevention plan depends upon the management involvement in the improvement of the quality and environment of the workplace.

About the Company

Incorporated in the year 2008, ABC Co. Ltd is a joint venture with two Japanese companies. The company is a market and technology leader in the field of automotive blow molded products. With 150 employees the company operates from two locations across India and catering to most of the original equipment's manufacturer (OEM) Maruti, Toyota, Nissan, Honda, GM, Ford, etc.

The collaborator company was founded in the year 1917 and its headquarters is in Osaka Japan. It is the leading manufacturer of automotive components such as roof spoilers, air ducts, washer and reserve tank, EA pad, deck board. Its major USP is EA pad and deck board across the globe, and has patented this technology. This collaborator offers technical knowhow to the ABC Company Ltd. that supports a range of products to the original equipment manufacturers (OEMs) in India. ABC Company Ltd. recently added washer tank system in their product line and also established a painting facility for plastic products in India.

ABC Company Ltd. intends to increase its market share in India. Incepted way back in 1958 with a meager start-up capital and now notching up a group turnover beyond US$ 662 million, speaks volumes of the conglomerate that it is today. A predominantly technical organization, this is poised for exponential growth. The stringent tests, system driven processes and development capabilities, driven by the principles of Quality Circles, Kaizen and 5S certifications catalyze the design and development verticals. The all-encompassing mantra of reliable, safe, pioneering, efficient, and environmentally sustainable product line ensures the company an edge in the Auto Hub manufacturing dynamics. Further details of the company can be seen through Table 1.

RESULTS

Table 2 is related to the risks identified and their resolution according to risk areas. In this table we have classified six risk areas i.e. fire, chemical exposure, statutory requirement, electrocution, noise and temperature, improper planning and in every risk area there is three subclassification of risk (A =high risk

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area, B = moderate risk area, C = low risk area). In the risk area 'fire' we identified a total of 28 risks out of that company have resolved 26 and two remain unresolved in the moderate risk area. In the 'chemical exposure' we have noticed nine risks out of them eight have been resolved and one remains as unresolved in a low risk area. In the 'statutory requirement', it has been noticed 12 risks out of that 11 have been resolved and one remains unresolved in the low risk area. In 'electrocution' area, we have found a total of 27 risks and out of that 26 have been resolved and one remains unresolved in moderate risk area category.

Table 1. *Brief account of ABC CO. Ltd and group.*

Vision	• Group to be Global Benchmark in QPCDSM and Pioneer in Technology • Group Turnover – 10K crore by FY 2020 ensuring Group Financial Norms • International Business to be 25% of turnover
Mission	• To continually enhance stakeholders' value through global competitiveness while contributing to society
Values	Five core values
• Customer	At supreme
• Quality	Nurture quality as an attitude
• Creativity and innovation	By driving 3 'P's (People, Processes and Products)
• Respect for the individual	People are most valued assets
• Respect for the workplace ethics	Work with passion, in team, value diversity, respect and aware to company policies, respect the rules and regulations, and respect the value and culture of the communities
Some highlights	
Founded in India	1958
Annual turnover in 2015–2016	Rs. 44000 mn ($ 662 mn)
Headquartered	Manesar, Haryana, India
Products	Roof duct, IP duct, spoilers, washer bottles, deck board and EA pad
Number of plants spread across India	40
Design solutions types	Innovative
No. of employees (all inclusive)	12000
No. of employees in ABC Co. Ltd	150
No. of patents	122
No. of design registrations	146
Design centers	India, Taiwan, Japan and Spain
Joint ventures	With global technology leaders
R & D spend	3% of Annual turnover
Overseas manufacturing facilities	Indonesia, Vietnam, Spain, Mexico, Morocco and Colombia

In 'noise and temperature' area, we have identified four risks out of that three have been resolved and one remains unresolved in the moderate risk area. In the 'improper planning' area, we have observed that a total of 47 risks and out of that 46 resolved and one remains as unresolved in a low risk area.

Table 2 shows the result according to risk category. In category 'A', all 23 risks identified were resolved by the

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management of the company. Very large numbers of risk were identified in category 'B' i.e. 78 risks out which four remains unresolved by management. Similarly in risk category 'C' three remains unresolved. These results further show that management is very proactive as all the risks in 'A' category that is high risk area were resolved by the management for the safety of the employees. In the moderate risk and low risk category, there were four and three risks respectively remain unresolved. However, management ensures to resolve it very soon.

Table 2. *Reported risks and resolution according to risk factor.*

Risk category	Number	Suggested solutions	Resolved	Unsolved
A	23	23	23	–
B	78	78	74	4
C	26	26	24	3

A = high risk, B = moderate risk, C = low risk

DISCUSSION AND CONCLUSION

If management ensured suitable working conditions and healthy environment for work and solutions of problems which are faced by employees, make employees more satisfied and motivated towards work [35]. Hence, employer need to identify the suitable health and safety practices systematically and carefully for the organizations so that accidents and incidents can be reduced. Further, organizations must adapt and develop health and safety practices like supervisory support, monetary help to workers, and safety motivation [36] to make employee motivated and also these facilitate. A key implication is that management that provides good safety climate and environment will reduce the accidents which in turn will enhance the safety performance as well as firm performance [37].

Government can also interfere for compliance of different Acts that offers benefits to employees, and supervisors at workplace. Seibert et al. [38] have found that management had played an important role in the development of positive safety environment at the workplace. Involvement of employees and management in making the health and safety polices results less accidents and injuries at the workplace [39]. Supervisor should also consider the health and safety issue, stress and frequency of happening of accidents at the workplace. Policies and programmers should be made mandatory to assist employees to reduce the incidents and stress.

Research is required to indicate the accurate management systems, actions and rules optimum management commitment and appropriate legislation. Of course, this study recommends whether a different situation of safety behavior exists privately owned manufacturing plants. This study is performed in a particular industry i.e. manufacturing. This study is just a starting point and there is need a more comprehensive study in a different industry.

It is responsibility of employer for managing work health and safety risks. Employer should eliminate the health and safety risks and also minimize the reasons which are associated directly or indirectly with the working environment. Firstly, employer should considerate about the risks related to manufacturing firm then he should be decided the proper procedure or technique to remove or get rid of risks at the working area.

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