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ASSESSMENT OF HEALTH AND SAFETY ISSUES IN A MANUFACTURINGINDUSTRY

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Abstract:*Industrial Sector is of vital worth for economic development of every country.Likewise, in Pakistan, industrial sector holds for about 24% of GDP. For any sort of business, always there exists the possibility of an accident or any damage for employees' health. For the very reason a dire requirement of a safety system arises (e.g. plan a strategy, authorize people and have unambiguous procedures); to administer such issues. Albeit a lot of research has been accomplished in construction sector; however, it is not comprehensive and even manufacturing sector research scope is limited to a small level. A labour normally spends most of his time at work place; therefore, work place must be safe and healthy; to evade any perilous impact regarding his safety concerns. This research is based on a case study conducted in a well renowned manufacturing industry of Pakistan. Pivotal focus of research is the assessment of health and safety practices and safety culture prevalent in manufacturing sector. A questionnaire survey would be performed to collect data regarding safety issues; so as to find out what is erroneous in Pakistan's manufacture why they are so and what should be done for their correction of these fallacious practices.*

Keywords: *Health and safety practices, HSE, Safety Culture, Injury Management.*

Introduction

Problem Statement

Occupational health and safety have generally been given little research attention. As a result, occupational health and safety has continued to remain outside mainstream organizational

and management researches. Most countries or industries scarcely recognize occupational health and safety practices as a crucial determinant of national development.

The main problem in Pakistan in regards to work-related safety is that people don't know much about it due to which work-related safety issues are not on the government's list of priorities, although the number of work-related deaths in Pakistan is much higher than the number of work-related deaths in Europe. This research will assess health and safety practices in the Pakistani manufacturing sector and how successful HSE departments are in securing workers from major and other work-related hazards and in ensuring sustainability.

Objectives

The specific objectives of this work are following:

1. To identify health and safety practices and reducing industrial injuries and adverse environmental impacts.
2. Implement advance approaches to labor safety management system with positive performance in other companies.
3. Find out way how we can manage health and safety better.
4. Implementing corrective/preventive measures

Literature Review

The level of occupational health and safety is at rock-bottom in Pakistan owing to many aspects like scarce medical facilities, meagre pertinent laws and illiterate and ignorant man power as well. Occupational injuries are the major reasons of economic decline. [Garret]

In Pakistan, safety in assembling sector has not been a major concern of deliberation despite a high accidental rate. Stakeholders seem merely interested in upgrading the product or service quality. They reflect their keen interest in curtailing the time and expenditure. Just a few assemblers have a trivial concern to ponder safety as a legitimate duty.

Occupational safety and Health Administration (OSHA) are liable for developing as well as implementing office security and aptness policy. Its responsibility is to establish defensive professional principles and let them enforced during scrutiny and pecuniary fine. Many studies have investigated the construction of the safety climate in organizations. However, they have not reached a common agreement on safety climate dimensions. [Chen CF, Glendon AI, Lu CS, Vinod Kumar M,]. The review of previous studies showed that management commitment to safety is a common dimension for safety climate. [Evans B, Flin R, Mohamed S**,** Seo D]

This study acknowledges an association between health and safety programs and risk management; among workers in assembling industry. It contemplates the necessity of health and safety trainings for workers in working area. While majority of the companies do not bother to execute health and safety trainings or workshops concerning their workers. It depicts the background of hazards and injuries that occur. [Fatini H]. This research presents the description of vocational injuries faced by many lives in the printing of screen units of Jetpur in India. It portrays illustrative research of silk industry by attempting survey analysis. It was perceived that employers agonize from face scars that render asthma and inflammation of the conjunctiva of eye. There was pustule in the worker's hands as they put their naked hands in warm water. It triggers an infection commonly decipherable as dermatitis. Overall physical, chemical and biological origin injuries were recognized. [T.Subramani]

Another study reveals occupational fatigue and safety of health which matters for Australian adolescent workers. Fatigue linked with health safety work (HSW) affairs for youth was traversed by employing mixed method techniques. To upgrade HSW merits for youth workers, six key points was recognized.

i. To enlarge expertise number
ii. The impact of juvenile
iii. Advancement in training as well as education
iv. Stakeholder allegiance
v. To maximally boost the awareness of workers pertaining HSW duties.
vi. To make continuous monitoring of HSW outcomes on daily basis

It was evaluated that these key points can hold back vocational fatigue and hassle in health relating issues. [Jessica Louise PATERSON 1]

Likely, an approach was proposed to recognize the core values like safety, health aid and welfare at work which support HSW. Almost 20 plus relevant factors and seven major values were acclaimed. Finally, these major values were clustered in three groups. [13]

Moreover, the tendency of vocational hazards affecting people in Pakistan was analyzed. Objective of this study was to judge the tendency of such values; to protect workers against injuries in labor force survey of Pakistan 2001-02 to 2012-03.

These values tendency was judged in terms of dissimilar criteria like dwelling, gender, designation, organization type, types of peril on the basis of reference years. The coefficient analysis was executed to investigate the relationship of these dissimilar vocational criteria. [Mohsin A]

The study of expression was carried out in aluminium industry to explore respiratory injuries. On an average everyday basis, 320 workers were found influenced by basis hazards of exhaust and aluminium gases; they were sorted in further two groups. In this British medical research, related material was gathered to conclude about perturbed functioning of lungs. For this purpose, chest X-ray was also employed. [Lamiaa H]

Some suggestions were proposed regarding injuries and health policies in Pakistan, the injuries which were found correlated with vital productivity and pecuniary loss. These injuries inflict not only the afflicted workers but their families as well. Two-third of death toll comes from vulnerable areas in world which are considered under progress. Likely in Pakistan, important resources of health sector are getting wasted with a huge population of 190 million.

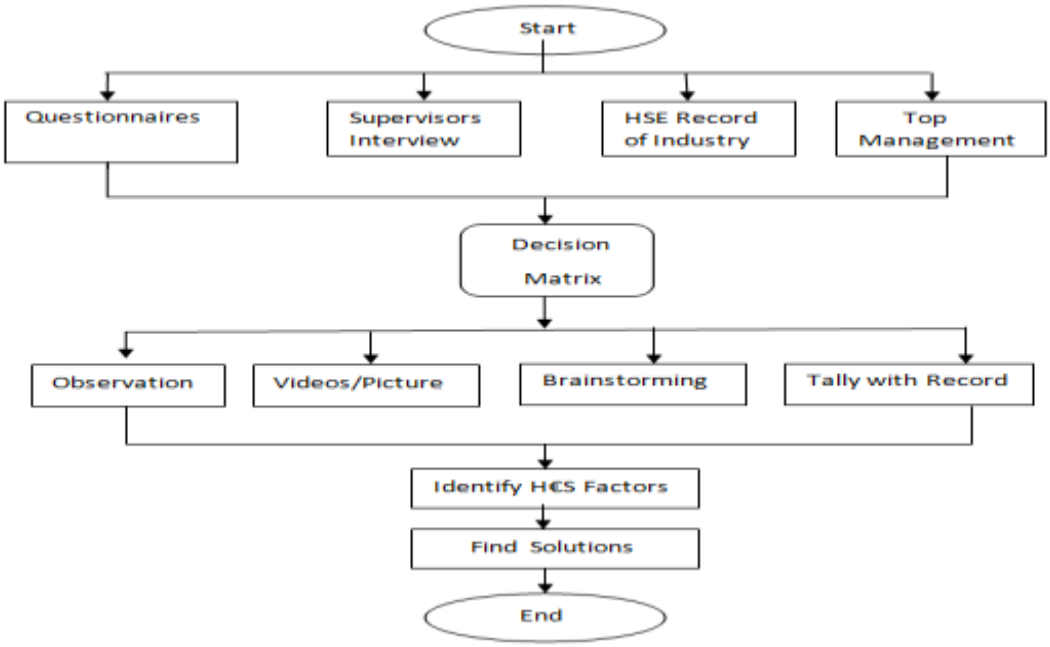
No conjecture has been made about national hazards aftermaths. A portfolio of enormous hazards in Pakistan is presented to propose some strategies regarding imperative public health problems. [Abdul Ghaffar]

In industrial accident grilling, an important factor of safety culture is pondered. An influential safety culture organization is much affective in narrating the accidents and hazards. Shared values are traced by safety culture corporate in an organization, which reflects a stroke in members' attitude. These values have sturdy impact over the working area injuries. Recently, there has been great interest in the concept of "prevention culture", especially from Occupational Safety and Health (OSH) policy makers. [International Labour Organisation

(ILO), Yangho Kim] The counsellors of Vocational Health and Safety (VHS) show eminent role in upgrading health safety at work; but still their safety performance is not satisfactory. The study appraises and differentiates the relevant significance of safety culture corporate. [Dr. ShineyChib]

Occupational risk was evaluated in sustained steel casting process. The obstructive and corrective actions were also pointed out in the hygiene and safety domain at the particular branch of work. [T. Karkoszka,]

In Iran, the study concerning evolution and growth level was carried out in six assembling companies. The number of items was reduced to 70 after undertaking a screening process. 58 items were declared excellent with content effectiveness index of 0.78. The analytical factor analysis resulted in the eight dissimilar dimensions of safety climate. The value scale of reliability for 44 final items was 0.96. The result of corporative factor analysis revealed that safety climate model is reasonable. The research reliability for favoured a scale of validity and
computing safety climate in assembling companies [AbolfazlGhahramani,]· The huge factors in health are efficacy, quality, management of safety and environment. The research chose health, safety and environment as an excellence tool to figure out the performance of huge range of safety management system. [Mohammadfam]



Figur1: Problem Identification Strategy

Design and Methodology

This section provides a precise overview of the whole research. Sundry techniques were deployed to collect data at site. Given figure embodies the way different strategies were used to gather data to assess health and safety issues in the concerned organization. The assessment leads to

1. Examine the safety practice
2. Identify the causative factors of accidents
3. Ascertain the difficulties in executing good safety practices

4. Verify the structural factors of safety environment
5. Appraise the impacts of demographic variables on safety.

A permutation of data collection tools was used to gather obligatory information. Collection tools were

I. Incident statistics
II. Questionnaires
III. First-line supervisor interviews
IV. Personnel
V. Top management

Overall target was to envisage health and safety issues at work. To complete data; tools of both types (qualitative and quantitative) were used. This landed a hand in assessing health and safety risks aspects deeply.

Questionnaires

Two questionnaire documents were shaped for the survey. One was for the top management and the other dealt with workers. Some questions were designed general; in order to verify the authenticity. A total of thirty copies were filled from the concerned organization employees. Questionnaire was prepared on likert scale so as to analyze it profoundly in different aspects.

Interview

Vis-a-vis interaction with the workers and top management was organized. It was an open discussion with the labors and top management. Initially mostly were indisposed to respond owing to some fears but later they felt comfortable in dialogue.

Record

Any kind of record regarding health and safety issues was requisite from the organization. Albeit it was confidential, despite that top management and workers coordinated willingly to share that. The information was provided that two years back company developed its HSE department as a separate unit. Accounts of monthly tracings regarding HSE were also offered to appraise and to recommend ameliorations in the company as well.

Top management

Just as like with workers; two-way dialogues were developed between top management and researcher. All the queries were handled with patience and logic. Top management motivated this endeavour and furnished concise views pertinent to health and safety relevant annals of the company.

Results and Discussion

Respondents' Profile

This section encompasses the inspection of responses, and results of data gathered from a variety of sources i.e. questionnaire, interview, personal observation and unprejudiced evidence. Autonomous documents of questionnaires were devised for top management and workers as well. In order to prompt detailed upshot; sixty copies of questionnaires were circulated within the organization. Out of sixty, twenty dealt with top management and rests

were designed for workers. Forty filled copies were acquired from respondents and feedback was analyzed by using Mini-Tab tool.

Top Management Response

One very crucial question from both the questionnaires was about the inquiry of accidents concerning the organization; if any accident or near miss happened in past is properly investigated or not.

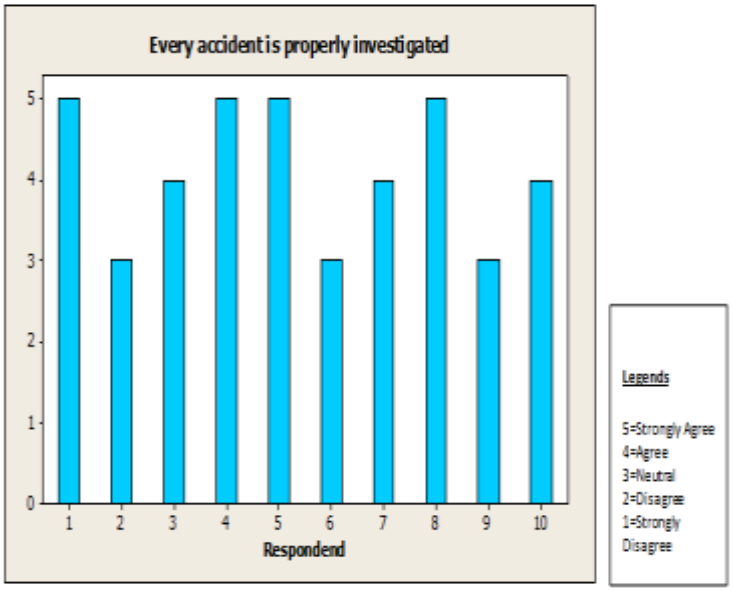


Figure 2: Record of Accidents Being Investigated

It is clear from the chart that the neutral response was 30% and 30% response was in favor of the statement. Remaining forty percent highly favored the query. Remarks show high level of negligence from higher authorities. De facto they do not consider minor fatigues and ailments in practice.

Workers' response

Response from the workers for the similar question is given below.

In this scenario 16% strongly agree, 26% moderately agree and 30% neutral response is apparent in graph. Verifying technique results in fair response about this question. It seems that investigations are performed but devoid of any rules and regulations, there is no discernment policy for investigation. It was diagnosed that in case of any mishap or accident; the higher authorities visit, mull over the causes, reimburse and devise the changes, but remain bereft of doing proper citations of mishap.

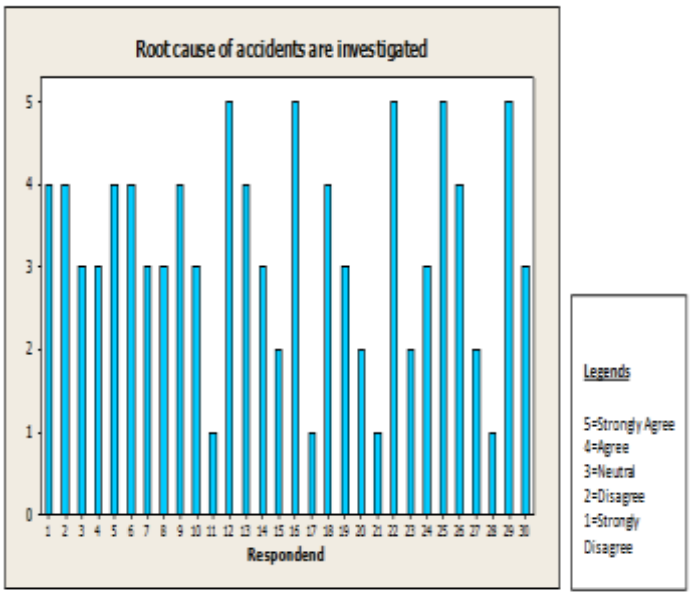


Figure 3: Workers Response Regarding Investigation of Accidents Hazards

A worksheet of potential hazards was circulated among workers and top management to inquire about the pervasiveness of hazards.

Top Management Response

Top management feedback reflects that majority of the employees are affected by slip/trip incident. A key issue of pointed objects affects 60% labor; however, response is satisfactory owing to trend of using safety equipment provided. The same observation was made in dusting and fumes matter. Since management is not used of shop floor environment hence it affects by any little slip mostly.

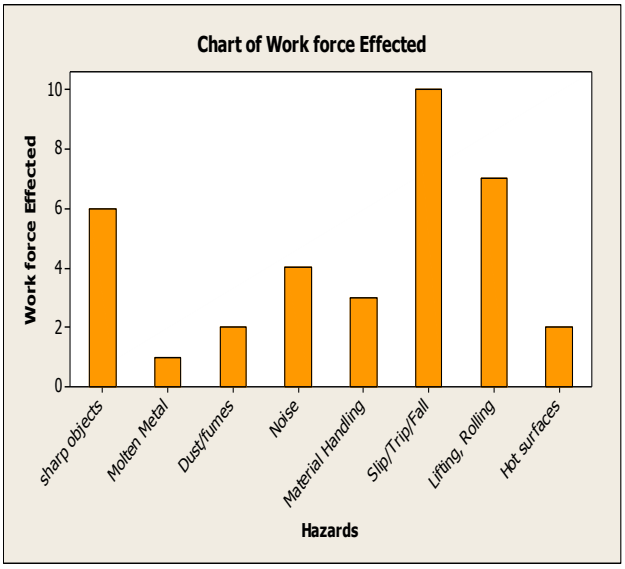


Figure 4: Top Management Response Regarding Hazards

Workers Response

Slip/trip/fall happens majorly owing to imprudently designed layout, including unprescribed pathways. Scrap was scattered on floor everywhere that can injure anyonewho passes. Further, chart speaks that sixty percent workforce is effected lifting/rolling the objects .It revealed by historical record of the organization that on spot death took place previous year due to some falling object from crane. Frequency of other hazards is quite low.

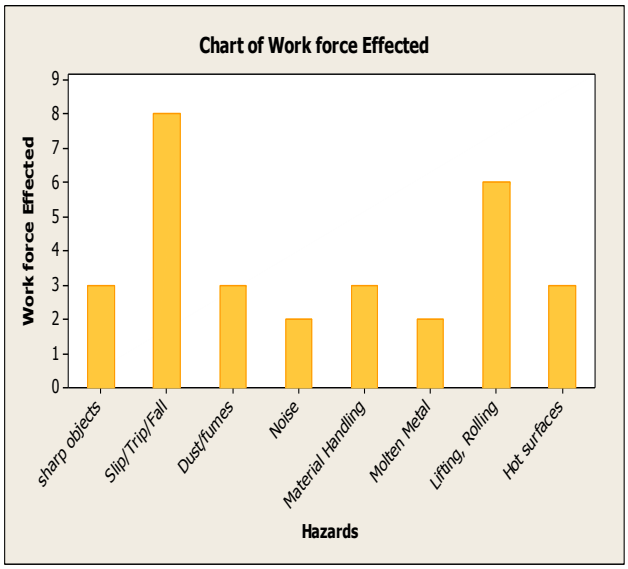


Figure 5: Workers Effected by possible Hazards

Personal Protective Equipment (PPE)

Respondents

Physical safety of employees is much concerned with the Personal protective equipment (PPE). A list of related PPEs' was rotated to check the usage. Pie chart illustrates the clear picture of the results obtained. As much of the work was related to the casting in the organization under study, so majority were using long sleeves. It was safe for the employees from health's perspective, who remains 12 hours in hot environment. Dust masks were also in

practice. It protects them to sniff sand particle. Major imperfection regarding PPE's was they were not using splash suits .percentage is extremely low .Reason for the blemish was the habitual nature of workers to perform their work without wearing safety equipment. According to them it obstructs their expertise. Mostly, venerable workers do not absorb this safety measures and they are contented doing their work with their intrinsic ways.

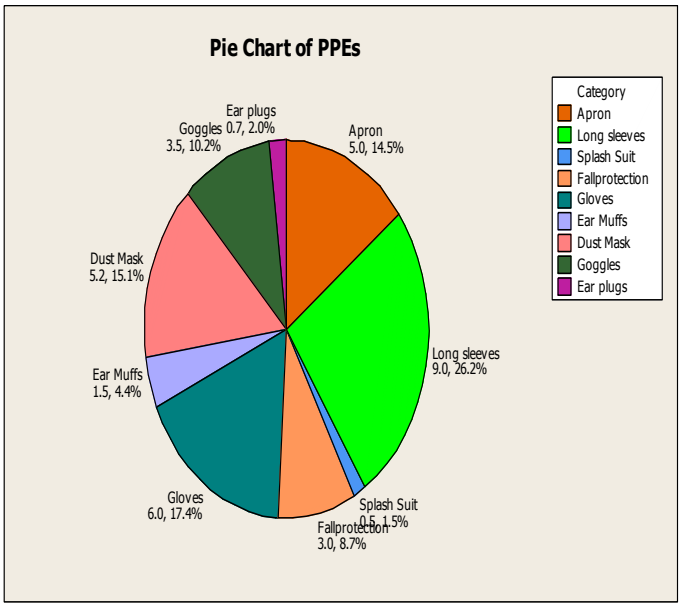


Figure 6: Employees Response towards using PPE's

Conclusions

Findings of the present study revealed that the health and safety practices in concerned organization were satisfactory up to a limit. Safety awareness was identified as a significant issue for majority of labours. Workers (60%) were less likely to report about something that might make them confined, than they were to inform an injury or loss. Employee's opinion regarding safety culture was rational and independent accomplice with individual health and well being. A very positive outcome was regarding refractory failure, only 3% once in 5 to 10 years. Following pie chart is showing the clear picture of the feedback.

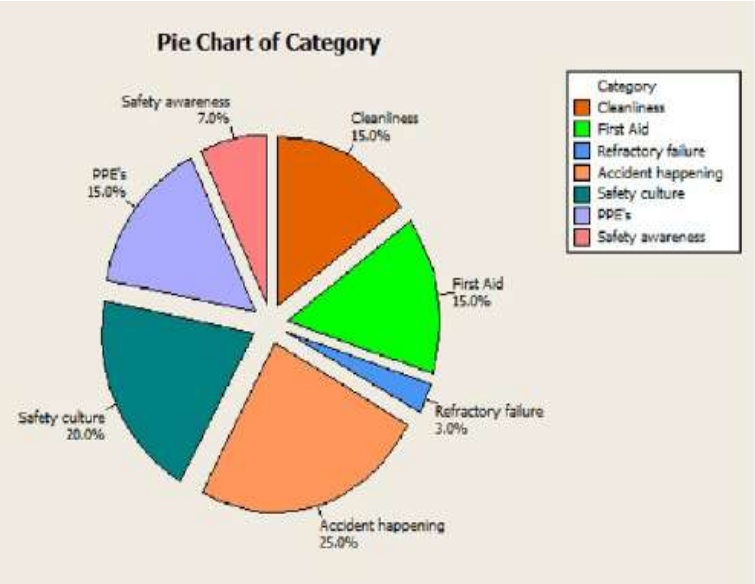


Figure 7: Net Assessment of the Organization Regarding Health and Safety

Recommendations

For the future, the top management should identify the relationship between health and safety practices and injury management. It should take health and safety issues as an independent variable and injury management as a dependant variable. Another suggestion is many organizations (comes under the umbrella of manufacturing sector) do not really take the health and safety practices issue in safe work environments. Top management should understand their responsibilities in handling their workers. Government of Pakistan must not only keep an eye on health and safety issues in construction sector but also in manufacturing sector.

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