



ISSN 2582 - 211X

# LEX RESEARCH HUB JOURNAL

On Law & Multidisciplinary Issues

Email - [journal@lexresearchhub.com](mailto:journal@lexresearchhub.com)

**VOLUME II, ISSUE II**  
**JAN - MARCH, 2021**

<https://journal.lexresearchhub.com>

**Lex Research Hub**  
**Publications**

## **DISCLAIMER**

All Copyrights are reserved with the Authors. But, however, the Authors have granted to the Journal (Lex Research Hub Journal On Law And Multidisciplinary Issues), an irrevocable, non exclusive, royalty-free and transferable license to publish, reproduce, store, transmit, display and distribute it in the Journal or books or in any form and all other media, retrieval systems and other formats now or hereafter known.

No part of this publication may be reproduced, stored, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior permission of the publisher, except in the case of brief quotations embodied in critical reviews and certain other non-commercial uses permitted by copyright law.

The Editorial Team of **Lex Research Hub Journal On Law And Multidisciplinary Issues** holds the copyright to all articles contributed to this publication. The views expressed in this publication are purely personal opinions of the authors and do not necessarily reflect the views of the Editorial Team of Lex Research Hub Journal On Law And Multidisciplinary Issues.

**[© Lex Research Hub Journal On Law And Multidisciplinary Issues. Any unauthorized use, circulation or reproduction shall attract suitable action under applicable law.]**

## **EDITORIAL BOARD**

### *Editor-in-Chief*

**Mr. Shaikh Taj Mohammed**

Ex- Judicial Officer (West Bengal), Honorary Director, MABIJS

### *Senior Editors*

**Dr. JadavKumer Pal**

Deputy Chief Executive, Indian Statistical Institute

**Dr. ParthaPratimMitra**

Associate Professor, VIPS. Delhi

**Dr. Pijush Sarkar**

Advocate, Calcutta High Court

### *Associate Editors*

**Dr. Amitra Sudan Chakraborty**

Assistant Professor, Glocal Law School

**Dr. Sadhna Gupta (WBES)**

Assistant professor of Law, Hooghly Mohsin Govt. College

**Mr. KoushikBagchi**

Assistant Professor of law, NUSRL, Ranchi

*Assistant Editors*

**Mr. Rupam Lal Howlader**

Assistant Professor in Law, Dr. Ambedkar Government Law College

**Mr. Lalit Kumar Roy**

Assistant Professor, Department of Law, University of GourBanga

**Md. AammarZaki**

Advocate, Calcutta High Court

## **ABOUT US**

Lex Research Hub Journal On Law And Multidisciplinary Issues (ISSN 2582 – 211X) is an Online Journal is quarterly, Peer Review, Academic Journal, published online, that seeks to provide an interactive platform for the publication of Short Articles, Long Articles, Book Review, Case Comments, Research Papers, Essays in the field of Law and Multidisciplinary issues.

Our aim is to upgrade the level of interaction and discourse about contemporary issues of law. We are eager to become a highly cited academic publication, through quality contributions from students, academics, professionals from the industry, the bar and the bench. Lex Research Hub Journal On Law And Multidisciplinary Issues (ISSN 2582 – 211X) welcomes contributions from all legal branches, as long as the work is original, unpublished and is in consonance with the submission guidelines.

**A CRITICAL STUDY ON SAFETY MANAGEMENT  
PRACTICES AND SAFETY PERFORMANCE IN  
MANUFACTURING INDUSTRIES**

*Author –*

**Gopinath Chatterjee**

Student of Industrial Safety Management  
Welfare Industrial Technical Training Institute

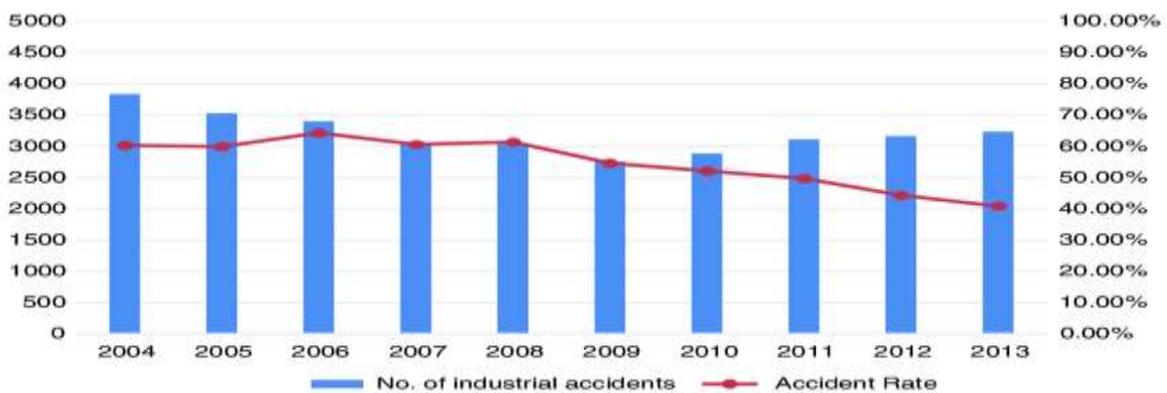
## **ABSTRACT**

When we look into the past from twenty- years the number of industrial accident which occurs in the manufacturing industries due to the absence of environmental safety, or unconscious of industrial accidents and its importance of safety. Maximum numbers of small and medium level manufacturing industries do not focus or give value to safety precaution because due to the reason of one-time investment however, they don't know about the indirect loss that happens due to any kind of accident. It is very important that management must focus on their safety improvement.

**Keywords** - Management, Industries, accident, safety, employees, workers, precaution

## **INTRODUCTION**

When we keep look into the theories, according to Heinrich theory, total eighty eight percent of industrial accidents were caused by human unsafe behavior, Ten Percent accidents were caused by the reason of industrial unsafe environment and the remaining Two percent accidents were attributed to other factors. In this modern era also, more number of industrial accidents are takes place due to the human mistakes.



*NOTE: This figure is taken from Research Gate for reference to show the Accident Rate of and Industry.*

There are some measures or methods which will help to prevent such kind of industrial accident and the most effectual method is to evolve the human behavior by giving certain training for the work, conducting behavioral depend on study which will decrease or reduce the accident rates and

also improve the safe environment under the industry. From the different studies, we can also say that, one of the major reason for beginning of industrial accident is worst management system regarding policy, safety systems etc. And for improving the safety culture or standards and behavior of the employee, employers and everyone, industry needs to give training, education, meeting, review etc. This motive, the industry is in the situation to payout money for the following exposure: Training, Education Meeting. Communications also take part in a major role in accident because the execution of communication from top level management to low level management is very bad in condition.

## METHODOLOGY

The Safety management system is an attitude to decrease the accident rates and improve safety Standards. Therefore some of the key components of safety management system are such as safety policy, safety assurance, safety risk management, safety promotion etc. This Research paper proposed some systematic approach of safety management system.



*NOTE: This figure is taken from the site of HSE and Fire Protection for reference.*

## **THE ORGANIZATIONAL SAFETY CULTURE**

The Safety culture play is an important role or function in regulating an organization's victory or defeat and which is a part of organizational culture. Organization with poor safety standards which are extensive, routine manner contravention, failure to obey with the company's own safety management system. The major steps have been used to improve the safety standards which are connecting with the company values, demonstrate leadership, developed safety outcomes, develop positive safety attitudes, engage and own safety responsibilities and accountabilities, increase the danger awareness and protective behaviors. The factors in the safety climate expression have been used to measure safety culture: first one is the course of action, management dedication, viewable management, safety measures, work team's influences, employee's participation, safety skill or knowledge both, management takes the beginning work of finding out the hazard at the workplace by using various kinds of methods and procedure, HIRA which is define as the Hazard Identification Risk Assessment, and the JSA which is define as Job Safety Analysis, work allow system etc. The main objective of the management is to remove the hazard and reduce their risk at the workplace. Periodic assessment, analysis of work at their workplace survey is a must necessary thing. The main objective of safety culture is to keep focus on the working environment of the industry or organization, welfare provision and legal obligations.

### **Behavioral Safety**

In our day to day life, we generally believed that human mistakes can cause injuries and mostly up to eighty to ninety percent of accidents occur due to human mistakes. The factors for human mistakes are totally based up on skill behavior, after then it can be rule based behavior, the, human knowledge based behavior. Safety behavior is referring as everything a person does in the noticeable in the working place. The existence of good safety behavior does always reflect good safety accommodating. Safety behavior is most important thing in manufacturing sector. It is necessary to recognize all behavior activity and then make a difference between from the unsafe and safe behavior. After the particular risk, all behavior must necessary to be made and shall be arranged in an order. Safety behaviors report the support or take side of safety training, motivation and education.

### **Safety Performance**

Periodical preservation, examination, inspects and review will keep away the chance of creating the hazard or danger. Safety accomplishment will improve the quality; it removes all the hazards periodically to decrease the accident rate. There are many frameworks that can be used to guide safety performance at the workplace. Safety inspect, the total number of safety training courses manage, percentage of workers trained in safety, the number of safety examination and percentage of legal obligations. There are two major safety performance indicators that have been used around the worldwide for industries, factories and other kind of workplaces. The first one is frequency rate FR and the second one is severity rate in short called SR. Safety inspect is the upcoming examine to the safety system from top level management to the low level management, it analyses the safety system, points out their error in their particular field and one of the better safety improvement condition to the industries. Safety performance can also be improved by monitoring the employee. Good management has skill and knowledge of monitoring will identify the problems and they have also an easy way for the solution. Monitoring is not an easy process it takes lot of time and effort, hence only trained and knowledgeable or skilled person are required. The two types of accident losses are direct losses and indirect losses. Direct losses are material loss, human loss, and the compensation. The Indirect losses are totally related to production loss, after then property damage, investigation cost, and the last one is insurance cost.

## **FINDING IN RELATION TO SMS EFFECTIVENESS-OBJECTIVE** **SAFETY PERFORMANCE.**

### **Work Health and Safety Performance**

The central focus of WHS performance is reduction of occupational damages to the workforces which mostly deals with manufacturing, construction and chemical industries. The majority established important optimistic effects with respect to dimensions of SMS. Numerous studies which are under the SMS implementation and safety performance are found. Among all these the two studies i.e., in manufacturing and chemical industries founded that all those countries which had certified SMS had considerably lesser accident rates. Though, across numerous studies there was a significant shortage of agreements with respect to components of safety managing system

were individuals are connected to safety performance. First, Askorn and Hadiku sumo (2008d) revealed that of the suit of SMS interference, in the circumstances of the construction industries.

- The first one is, **Incident Investigation**
- Second is, **Audit**
- Third is, **Subcontractor Management**
- And the last one is, **Safety Motivation was related with a decrease in accident rate.**

After then another type of studies examining the performance of the WHS in the manufacturing sector of US are as follows:

1. The first one is, **Hazards Identification**
2. Second is, **Tracking Hazards Control Exertions**
3. Third is, **Promotions related with Health Programme that were the three major serious components.**

After then in another type of studies it was identified that WHS performance, a team which is Spanish they examined that it signifies:

- ❖ **The contemporary element of prevention activities**
- ❖ **The exhaustive use of good quality tools related to the management**
- ❖ **And the last was, the entitled of workers were the first primary factors that had been contributed to decrease the number of incidents or injuries.**

The main focus was in a Dutch study, which identified that the interventions which bring about constructive conversation between shop floor and line management, giving motivation to the line manager and boosting the strength monitoring and also finding out the loopholes in the safety management system which is ready for more success. As well as, firms which are combined with technical and person oriented methods in their SMS which were shown to have the greatest safety performance.

Therefore, we can say that the major studies which is analyzed and reveal that the positive approach of components related to safety management system, while the studies which were in large numbers have been failed to identify the positive approaches. When we initially talk about Australian road maintenances industry found that there is no relationship between the individuals,

view point of safety management practices detected safe behavior. In this study, it was found that it was quite appropriately recommended that the effectiveness of the SMS may only be seen in the organizational level as compared to the guidance of the rate of unsafe acts. Study of the Iranian team it was found that there were no relationships between the execution of SMS and the productivity barometer within an organization which have provided the evidence to deny conventional wisdom.

### **Low-Probability / High- Consequence Industries**

As per the case with reverence to work healthiness and safety performance, no consistent verdicts were established with respect to enactment on several dimensions of an SMS and low safety results from the perception of fewer probability but high significances events in the chief hazard procedure industries. The first studies explores this association, the usage of such a standardized inspection device to evaluate the functioning of safety regulatory system components in Europe could not predict either mislaid time grievances or loss of containment rates. Basically, this put forward that in industries with high risk there, may be a minute relation between the factors which are manipulating the professional health and safety consequences, and the performance which are in process safety.

Certainly, when it comes to one of the greatest crucial studies in terms of significance to high risk transport industries, there were no actual relation recognized between daily safety performances in addition low-probability / high-consequence events. In one of the study from United Kingdom offshore oil and gas industry which used objective safety performance data,

- 1. Management Commitment**
- 2. Health Promotion and scrutiny were established to be related with declined accident rates.**

To certain degree, the deficiency of strong association between objective safety data in industries with higher level of risk and the performance of components of an SMS is probably encouraged by the inherent lack of frequency of higher significance downfall, and may be reflective of matters in measurement, rather than the deficiency of any underlying association.

## **FINDING IN RELATION TO SMS EFFECTIVENESS-SUBJECTIVE** **SELF-REPORT**

### **Work Health and Safety Performance**

As per the objective safety study it was found that there was well defined lack of reliability in the finding of the serious constituent of safety management system efficiency. There is numerous studies which emphasized variable that intermediated the effect of safety management occupation on safety consequences. According to one of the study, it was identified that individual attitude intermediate the relationship among the management and accident happening, and particularly that individual person accountability and personal attributes were the most prominent factors which have encouraged accident environment. However, these studies are absolutely prejudiced as they are taken from a survey by an individual response which defines and highlighted the entire above factor:

- The first one is, **Management Commitment**
- Second is, **Safety Communication between them.**

### **Low-Probability / High-Consequence Industries**

There are numerous studies which generally deals which exploring the association between components of SMS and safety performance in the context of chief hazard amenities. One of the studies is conducted from an oil refinery environment which created a relationship among self-related safety performance and the two other components which are as follows:

- 1) **Management Commitments**
- 2) **Safety Communication.**

There was a second study which found that there was no direct consequence of management commitment but somewhat:

1. **Supervision**
2. **Safety Reporting**

3. **Team Collaboration** (they are regarded as urgent drivers of safe work practices).

In another type of study it was obtained where by:

- ❖ First, Management Commitment
- ❖ Second, Safety Rules and Measures were identified to be directly connected with work practices which are related to safety in several hazard facilities in India.

Hence, we can sum up that the aforementioned components such as lack of consistency was the individual findings which are related to relationship among SMS and safety performance.

### CONCLUSION

The manufacturing industries do not focus or give value to safety precaution because due to the reason of one-time investment however, they don't know about the indirect loss that happens due to any kind of accident. It is very important that management must focus on their safety improvement. When we keep look into the theories, according to Heinrich theory, total eighty eight percent of industrial accidents were caused by human unsafe behavior, Ten Percent accidents were caused by the reason of industrial unsafe environment and the remaining Two percent accidents were attributed to other factors. The Safety culture play is an important role or function in regulating an organization's victory or defeat and which is a part of organizational culture. Organization with poor safety standards which are extensive, routine manner contravention, failure to obey with the company's own safety management system. The major steps have been used to improve the safety standards which are connecting with the company values, demonstrate leadership, developed safety outcomes, develop positive safety attitudes, engage and own safety responsibilities and accountabilities, increase the danger awareness and protective behaviors. The factors for human mistakes are totally based up on skill behavior, after then it can be rule based behavior, the, human knowledge based behavior. Safety behavior is referring as everything a person does in the noticeable in the working place. The existence of good safety behavior does always reflect good safety accommodating. Safety behavior is most important thing in manufacturing sector. It is necessary to recognize all behavior activity and then make a difference between from the unsafe and safe behavior. The central focus of WHS performance is reduction

of occupational damages to the workforces which mostly deals with manufacturing, construction and chemical industries. The majority established important optimistic effects with respect to dimensions of SMS. Numerous studies which are under the SMS implementation and safety performance are found. Among all these the two studies i.e., in manufacturing and chemical industries founded that all those countries which had certified SMS had considerably lesser accident rates. work healthiness and safety performance, no consistent verdicts were established with respect to enactment on several dimensions of an SMS and low safety results from the perception of fewer probability but high significances events in the chief hazard procedure industries. The first studies explores this association, the usage of such a standardized inspection device to evaluate the functioning of safety regulatory system components in Europe could not predict either mislaid time grievances or loss of containment rates. Basically, this put forward that in industries with high risk there, may be a minute relation between the factors which are manipulating the professional health and safety consequences, and the performance which are in process safety.

## **REFERENCE**

### **Websites**

1. <https://www.sciencedirect.com/science/article/pii/S0001457513002972>
2. [http://www.hsa.ie/eng/Topics/Managing\\_Health\\_and\\_Safety/Safety\\_and\\_Health\\_Management](http://www.hsa.ie/eng/Topics/Managing_Health_and_Safety/Safety_and_Health_Management)
3. [https://www.researchgate.net/publication/326722322\\_A\\_Study\\_On\\_Safety\\_Management\\_Practices\\_And\\_Safety\\_Performance](https://www.researchgate.net/publication/326722322_A_Study_On_Safety_Management_Practices_And_Safety_Performance)
4. <https://www.ehstoday.com/safety/article/21910737/the-top-10-ways-to-improve-safety-management>
5. <https://ireportsource.com/blog/safety-management-program/>
6. <https://www.journals.elsevier.com/accident-analysis-and-prevention>
7. [https://www.researchgate.net/publication/281310956\\_Accident\\_Analysis\\_and\\_Prevention](https://www.researchgate.net/publication/281310956_Accident_Analysis_and_Prevention)
8. <https://www.sciencedirect.com/journal/accident-analysis-and-prevention/vol/110/suppl/C>
9. <https://www.uwec.edu/files/839/Supervisor-Accident-Analysis.pdf>