

# THE HEALTH AND SAFETY MANAGEMENT PERFORMANCE OF CONSTRUCTION SMEs IN GUJARAT: BARRIERS AND SOLUTIONS

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**ABSTRACT:** The construction industry is one of the important sectors for the economy of any countries particularly for developing countries. At the same time, it is one of the dangerous sectors which prone to many hazardous activities. These high risky activities lead to injuries, fatalities, various occupational diseases or even death which affect negatively on the reputation of the organisation, family of the victim and ultimately create the bad image of the construction industry. this review paper is to examine Health and Safety management practices of the construction industry in Gujarat, Also, it tries to investigate main barriers which are responsible for poor Health and Safety management performance of Gujarat construction SMEs. Further, this review paper also helps to understand the behaviour and attitude towards safety, safety perceptions of the construction worker and safety management practices.

**KEYWORDS:** Construction project management, Safety in construction, Health and Safety management, Health and Safety in SMEs, Health and Safety performance in construction.

**INTRODUCTION:** The construction industry continues to play a major role in the development of our country. Construction in developing countries such as India is more labour intensive than that in the developed areas of the globe. The construction industry seems to suffer from general inability to manage workplace health and safety to a level.

Safety culture is being interested in many organizations as a means to reduce the potential for disasters, accident and injuries. A positive safety culture can be an effective tool for improving safety in an organization and creating good atmosphere in the workplace. Increasingly in the last decade, researchers have shown interest in a study on safety management in construction projects.

## Health and Safety Management on construction projects

There is a significant difference between large and small contractors. Most large firms do have a safety policy, on paper, but employees generally are not aware of its existence. Nevertheless, a number of major constructors exhibit a concern for safety and have established various safety procedures. They also provide training for workers and maintain safety personnel at the job site.

Construction Industry in India is highly prone to hazards related to site activities and construction projects engage large number of contractual workers. These workers come from varied trades especially from rural areas and agricultural background who do not have proper training in construction safety also are not literate enough to forecast the unknown dangers.

During execution at site, these workers are exposed to various risks involved in construction works and other occupational diseases and health hazards which cause injuries and illnesses.

Plan, Do, Check, Act	Conventional health and safety management	Process safety
<b>Plan</b>	Determine your policy/Plan for implementation	Define and communicate acceptable performance and resources needed
<b>Do</b>	Profile risks/Organise for health and safety/Implement your plan	Identify and assess risks/Identify controls/Record and maintain process safety knowledge Implement and manage control measures
<b>Check</b>	Measure performance (monitor before events, investigate after events)	Measure and review performance/Learn from measurements and findings of investigations
<b>Act</b>	Review performance/Act on lessons learned	

Plan-Do-Check-Act approach for H&S management (HSE, 2013)

## LITERATURE REVIEW:

**Abdul et al. (2007)** took interest in safety awareness among construction companies. Management must establish and enforce safety policies safety systems. They should devolve their activities by including more monitoring of safety performance at the site and supervise periodic and random safety inspections to ensure the implementation of safety standards. Furthermore, the efficiency of site safety inspections by using more qualified safety supervisors with full authority should be increased. In-house regular inspections should be carried out by competent supervisors.

**Jain et al. (2007)** proved that in India the construction industry is the second largest employer next to agriculture whereas it is next to the road accidents in our country. Each site poses its own unique challenges in terms of industrial safety requirements which have to be tackled by sincerity and professionalism. Modern management and machinery are helpful in achieving these objectives when used in a disciplined way.

**Charehzehi et al. (2012)** said that, the issue of safety performance has been focused at construction projects in both developed and developing countries. Some important elements that create a significant portion of accidents include: safety management error, poor training programs, human element, act of god, outdated procedure and no clear monitoring policy. Therefore, they tried to introduce continuous safety development that includes 6 steps. These steps involve creating safety regulation, identify hazard, assess and evaluate risk, decide precaution, record findings, and updating our finding in relation to the work condition. In overall, increasing safety performance and creating safer condition in construction projects need more attention to find hazard and kind of risk that can cause any damage to the properties and humans.

**Khan a Raghunath et al. (2015)** intended to provide the respondents with necessary information needed to better manage the safety management in construction projects. Furthermore importing safety policy and standards, safety organization, safety training, inspecting hazardous conditions, personal protection program, plant and equipment, safety promotion and management behavior also help in ensuring safety at construction sites.

**Subramaniam et al. (2016)** concluded that safety performance has gained acceptance as a field of study and has been increasingly researched nowadays. The paper identifies and discusses the basic issues that require focus prior to conducting a study on safety performance. Study on safety performance should be based on multi-level analyses.

**NielsenKent et al. (2014)** in his International research indicates that internal health and safety organizations (HSO) and health and safety committees (HSC) do not have the intended impact on companies' safety performance. The study provides evidence that the HSO can improve company safety culture by focusing on safety-related interactions.

**Hassanein et al. (2008)** in his study presents the results of a questionnaire survey that was conducted among a selected sample of large-size contractors. The study concluded that safety programs applied by contractors operating in Egypt have to be more formal; recommending countries like Egypt, where accident insurance costs are fixed irrespective of the contractor's performance, to study the feasibility of linking accident costs to the contractor's performance. This way, contractors will act on improving safety programs, resulting in safer performances and consequently, lower insurance costs.

**Liang et al. (2010)** identified that the effectiveness of safety management in construction and installation engineering project determines the future and fortune of involved enterprises. By strengthening the construction management department's safety management work, defining responsibility of each party involved in construction project, and strengthening the supervision of government departments, safety management can be carried out and safety accidents in construction project can be prevented. As a result, the production safety in construction and installation projects can be ensured.

**Jothsna et al. (2017)** stated that construction works all over the world pose serious threat to workers and non-workers. The impacts of the historical, economical, psychological, technical, procedural, frequency and the environmental issues are considered in terms of how these factors are linked with the level of site safety performance. It was found to be that the workers have received a limited culture of safety awareness, which led to main cause of

accidents. Improvement in safety culture is thus obtained by observing and Intervening frontline workers.

**Chen et al. (2017)** mentioned that the construction industry has hit a plateau in terms of safety performance. The awareness and perception of workers toward safety, health and their working environment are important aspect to enhance the building construction to the better condition to the workers. Safety climate may be geographically sensitive, thus it is necessary to examine how the construct of safety climate is defined and used to improve safety performance in different regions. These findings highlight the role of organizational factors as well as individual factors in affecting individual safety performance and psychological well-being. Construction organizations need to not only monitor employees' safety performance but also their psychological well-being, promoting a positive safety climate.

**Yiu Chan et al. (2016)** described that the construction industry is one of the industries considered with the highest accident rates over the world because of its high risk and fast changing work nature. Safety managers (safety-in-charge) are considered to be one of the key personnel responsible and accountable for SMS. His quality and competency were vital to influence the performance of SMS or site safety performance. These two particular areas were also recommended to be quantified in order to better justify the performance of the safety management systems, together with the construction site safety performance.

**Major Findings from the Literature Review:**

- I. There is lack of knowledge about how to use equipments on site and also lack of management.
- II. Employee perceptions, safety behaviors, and environmental or situational features can be accessed through safety climate surveys, peer observations and systems audits/inspections.
- III. Warning signs, guides or reflector should be displaced where necessary on site.
- IV. Behavior based safety management should be proposed to rectify the human ware failures.
- V. Construction Company should look to improve their policy or the construction design so as to cope with the environmental factors.

- VI. Owners of large projects should more actively participate in construction safety management in each stage of project execution including project design contract selection, contract development, the construction phase, selecting safe contractors, and developing the safety culture on the projects through safety training and safely recognition programs.

**FACTORS AFFECTING HEALTH AND SAFETY PERFORMANCE:**



Factors affecting safety management on construction. (Source:<http://pubs.sciepub.com/ajcea/3/5/5/figure/2>)

**HEALTH AND SAFETY MANAGEMENT: EIGHT BUILDING BLOCKS:**

**1. Senior management's commitment to the management :**

Managing safety, just like any other management activity, requires allocation of resources. This allocation of resources is, in all organizations, a function of senior management, hence the need for senior management's commitment to the management of safety. In plain language: no money, no safety.

**2. Effective reporting :**

It is a known aphorism that "one cannot manage what one cannot measure". In order to manage safety, organizations need to acquire safety data on hazards that allow for measurement to take place. Most of such data will be

acquired through voluntary and self-reporting by operational personnel. It is essential therefore for organizations to develop working environments where effective safety reporting by operational personnel takes place.

**3. Continuous monitoring :**

Beyond collection, organizations must analyse Safety Management Manual (SMM) and extract safety information and safety intelligence from data, because data that are collected and relegated to a drawer are as good as no data at all. Furthermore, it is essential to share the safety information and intelligence gleaned with those who operate the system daily for they are the ones who are in constant contact with the hazards, the consequences of which effective safety reporting aims to mitigate.

**4. Investigation of occurrences :**

It is not as important to identify “who did it” as it is to learn “why it happened”. System resilience can be much more effectively reinforced by removing systemic deficiencies than by removing supposedly “unfit” individuals.

**5. Sharing safety lessons learned and best practices :**

Another well-known aphorism eloquently illustrates the need for data sharing and exchange of safety information: “learn from the mistakes of others, you are not going to live long enough to make them all yourself”. The aviation industry’s excellent tradition of sharing safety data must be maintained and, if at all possible, reinforced.

**6. Integration of health and safety training for operational personnel :**

Seldom do training curricula for operational personnel include dedicated safety training. There is an assumption that since “safety is everybody’s responsibility”, operational personnel are safety experts in their own right. There is an urgent need to include dedicated training addressing the basics of safety management at all levels of operational personnel training.

**7. Effective implementation of standard operating procedures (SOPs)**

SOPs, checklists and briefings, whether on a flight deck, in an air traffic control room, in a maintenance shop or an

aerodrome apron, are amongst the most effective safety devices operational personnel have to discharge their daily responsibilities. They are a powerful mandate from the organization regarding how senior management wants operations to be conducted. The safety value of realistic, properly written and constantly adhered to SOPs, checklists and briefings should never be underestimated.

**8. Continuous improvement of the overall level of safety :**

Managing safety is not a one-day affair. It is an ongoing activity that can be successful only through continuous improvement.

**SME’s and their contribution**

The construction industry is recognised as one of the fastest growing industry worldwide that plays an important role in the economic growth of any country particularly in developing countries (NIOH, 2017). In India, after agriculture, the construction industry is the largest labour- intensive industry (Kanchana *et al.*, 2015; Patel and Jha, 2016; NIOH, 2017). The construction industry is a quite large sector and contributes to the economy, large employment and GDP. The construction industry in most of the developing countries is dominated by SMEs. In addition, Unnikrishnan *et al.* (2014) and Nagaya (2017) indicate that SMEs are the main pillar of an economy in developing countries. Therefore, the construction industry and SMEs both are important for economic development of the developing country.

Types of entity	Employee	Assets	Annual Sales
Micro	<10	≤USD 10,000	≤USD 10,000
Small	<50	≤USD 3 Million	≤USD 3 Million
Medium	<300	≤USD 15 Million	≤USD 15 Million

Classifications of MSMEs (Jain and Gandhi, 2016)

**CONCLUSION:**

The work environments in construction activities are generally more hazardous, than other industries due to the use of heavy equipment, dangerous tools, and hazardous materials, all of which increase the potential for serious accidents and injuries. Therefore, it is evident that a focused dedication inwards safety is needed from

construction at all levels. It can be inferred from the survey data that safety managers have the opportunity to influence and enhance the sense of safety and the quality of the work environment. Owners of large projects can more actively participate in construction safety management in each stage of project execution including project design contract selection, contract development, the construction phase, selecting safe contractors, and developing the safety culture on the projects through safety training and safety recognition programs.

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