

Exploring The Influence Of Safety Culture And Employee Safety Behavior On Job Satisfaction In The Vidarbha Region's Iron And Steel Sector: An Empirical Investigation

SUCHITRA SIDDHARTH LABHANE¹,
Dr. SHINEY CHIB²

¹Research Scholar, Datta Meghe Institute of
Management Studies.

²Research Supervisor, Datta Meghe Institute of
Management Studies.

Abstract :

Risk management is a strategic challenge for manufacturing companies due to the high stakes involved in ensuring worker and customer safety. However, it is unclear whether or not the use of many instruments to evaluate and track safety performance has any effect on the overall safety atmosphere and culture in the workplace. Employee involvement is investigated as a potential mediating factor between safety culture and environment and safety performance in India's industrial industry. Purposive sampling was used to pick 368 participants from among employees of five large-scale industrial manufacturing companies for this quantitative study. SPSS 23 was utilised for a number of different methods to be combined into one, such as structural equation modelling, growth trajectories, and a correlation matrix. Using these approaches, a correlation was forged between safety-related factors like culture and environment and concrete metrics like performance. The primary takeaway from the research is that safety atmosphere is important, but that safety culture has an even greater bearing on safety performance. Both the relationship between safety environment and safety performance and the relationship between safety culture and safety performance were significantly mediated by employee involvement. These findings suggest that in order to improve safety performance and overall safety, policymakers and

practitioners in large-scale manufacturing businesses in India should give priority to strengthening the company's safety culture and environment.

Keywords: safety culture; safety climate; safety performance; employee engagement.

Introduction

"Occupational As the global economy quickly modernises and the service sector expands, health and safety have become major concerns for people everywhere. Workplace health problems are increasing in prevalence. Workers' health and safety concerns have emerged as a central focus in the search for ways to protect the industrial sector's labour force. When discussing how firms handle safety-related issues and how their workers see and approach them, the terms "safety climate" and "safety culture" are often used. An organization's "safety culture" is shaped by its members' shared values, norms, knowledge, and habits when it comes to ensuring the well-being of its workers. Workplace safety policies, practises, and standards are now included in the concept of "safety climate," and are evaluated by experts together with employee perceptions of these elements. The original meaning of "safety climate" has evolved over time to include this broader concept. The dimensions of the continuing discussion about safety climate may differ across sectors.

There is a difference between safety culture and safety climate, with the former referring to the values and norms that shape how an organisation approaches safety and the latter focusing on how people really feel about and approach safety on the job. Both ideas are essential to a culture of safety and to lowering the likelihood of accidents and injuries. Employee surveys are a common way to gauge the safety environment in an organisation, whereas evaluations of the safety culture are more common. A safer workplace may be achieved by businesses adopting a holistic safety strategy that takes into account both the company's safety culture and climate. Due to the multifaceted nature of safety culture, safety environment is always

used as a proxy for safety culture while conducting studies.

Safety performance, safety culture, safety environment, and employee engagement are all interconnected in this research of Indian manufacturing firms. Figure 1 illustrates the complicated relationship between safety culture and environment and safety performance, and underlines the mediating function of employee involvement in this relationship. Given the high prevalence of work-related injuries in developing nations like India, this study has the potential to build effective safety programmes for sustainable economies and commercial success in manufacturing firms, despite the fact that research gaps continue in the country.

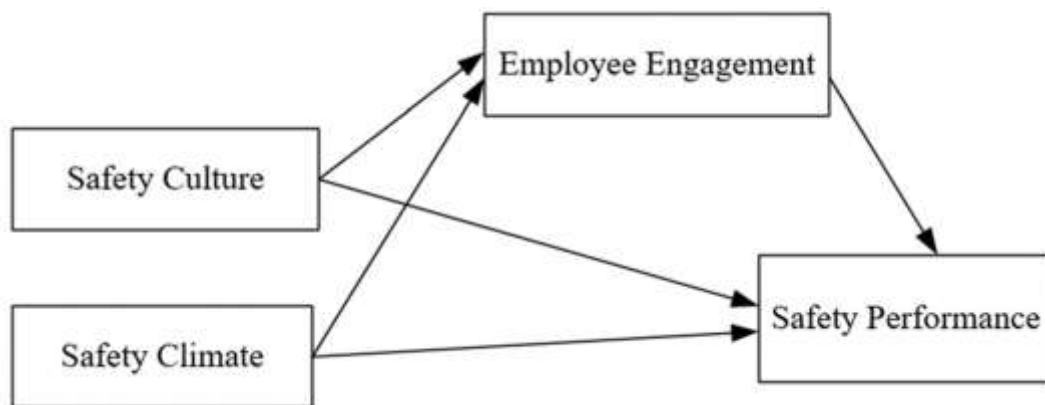


Figure 1. The conceptual model of this study by the authors.

There is a need for further research on the elements of an organization's structure, processes, and policies that affect safety culture, climate, employee engagement, and safety performance. According to data collected by the Indian Ministry of Health, there were 724 injuries per 1000 exposed employees among Addis Abeba's 16,611 large-scale industrial workers. The significance of safety in manufacturing businesses is shown by the wide range of injury rates. Workplace injuries are 10-20 times more common in developing countries than in developed ones. An annual rate of 317 injuries per 1000 exposed Norwegian employees was observed in one research, whereas an annual rate of 75 injuries per 1000 exposed American primary industry workers was documented in another. The results of this study highlight the seriousness of safety

problems in India and the pressing need for comprehensive safety programmes in industrial settings. Workplace safety is essential for the long-term performance of manufacturing businesses because of the difficulties and unknowns that safety concerns introduce.

Indian factories can't make the transition from an agrarian to an industrial economy without first establishing safe working conditions for its employees. The development, growth, and success of a business are all facilitated by the presence of a risk-free workplace. This raises the following issues for consideration: To what extent do an organization's safety culture and environment affect its safety performance metrics? Furthermore, how can employee engagement serve as a middleman between these factors?

There is no consensus in the literature on how to define safety performance. Several papers have investigated the correlation between manufacturing companies' safety culture, safety environment, employee involvement, and safety performance. The idea that safety culture and climate are two separate things is an example of a competing theory. Some research has shown that safety climate is a manifestation of safety culture, while others have suggested that safety climate is distinct from safety culture and simply refers to workers' shared attitudes of safety. Employee engagement as a moderator of the connection between safety-related atmosphere and performance is another area of disagreement. Researchers have discovered conflicting findings when looking at the relationship between employee engagement and safety performance. A frightening 7500 people lose their lives every day due to accidents and diseases they contracted on the workplace because of unsafe working conditions. It's more than the yearly death toll from car accidents, battlefields, and homicides combined. This worldwide problem is exacerbated by a lack of awareness and education, unsustainable corporate practises, and a proactive culture. Economic liberalisation and technical improvements worsen the situation, especially in less

developed countries, but sadly neither governments nor businesses have taken anything to solve the issue.

Literature Review

To this end, we gathered and analysed empirical data from 95 percent of publications published between 2000 and 2022 and 47 percent of source journals published between 2017 and 2022 that dealt specifically with safety issues. The research makes extensive use of several distinct keywords. Manufacturing, Safety Atmosphere, Safety Culture, Employee Involvement, and Safety Results were some of the terms used. Google Scholar, Web of Science, and Engineering Village, among others, were searched using the following terms.

When discussing businesses, workplaces, and security, the word "culture" often comes up. This work provides some clarity on effective safety culture, aggregation levels, and safety performance by giving pertinent empirical facts and associated theoretical developments. Consistent health and safety performance is often affected by an organization's safety culture (Cox, S.J., & Cheyne, A.J.T., 2020). Especially in high-risk businesses, safety culture has been the subject of several studies looking at its potential effects on safety performance (Cooper, M.D. 2021). However, businesses are just in the beginning phases of establishing a reliable safety performance. Cooper claimed that a culture of preferential treatment increases security. An organization's safety culture is made up of the subjective values, attitudes, perceptions, and competencies of its employees as individuals and as a collective.

The phrase "safety climate," defined by Zohar as "a summary of micro-level perceptions that employees hold regarding their work environments," was coined by Zohar. When it comes to organisational and psychological processes that affect safety, safety climate is an important junction. According to a growing body of literature, an organization's safety atmosphere influences workers' motivation for safety-related tasks, which in turn influences their behaviour both in and out of the workplace.

The term "safety performance" is used to describe the success of a company's safety management practises and programmes in reducing the number of accidents and injuries that occur on the job in a manufacturing setting. Safety performance in large-scale industrial firms is a topic of much discussion, which speaks to the complexity and fluxuating nature of this subject. Safety environment has been shown to be a substantial predictor of safety performance in a variety of sectors, including manufacturing, construction, healthcare, and transportation, sparking heated discussion on the topic.

Objectives of the study

This research looks at how safety environment and safety culture affect safety performance via the medium of employee involvement. The purpose of this study is to investigate the mediating impact of employee involvement in the relationship between safety atmosphere and culture and performance.

Research Methodology

The investigation was conducted using a quantitative methodology. Purposive sampling was used to choose 123 participants from a population of 105 workers for this research. In addition, the study selected 5 manufacturing enterprises out of a possible 15, creating a concentrated group of respondents and businesses that strengthened the validity of the quantitative approaches used. Simple random-sampling procedures were utilised for the selection of individual responders to guarantee fair and equitable representation.

Data Analysis and Interpretation

Multiple Regression Analysis

Through the use of multiple regression analysis, the research was able to determine which responsive components really affected the safety performance outcomes. The connection between safety culture, safety environment, employee engagement, and safety performance was very valuable and fruitful. According to the regression findings, the estimated value of each parameter varied from 0.229 (EEG) and 0.236 (SCL) to 0.511 (S.C.) with (S.P.). When employee engagement

(EEG) was taken into account, the considerable and positive indirect influence among the variables was made clear, with estimated parameter values ranging from 0.402 (SCL) to 0.468 (S.C.). By dividing the estimations by their associated standard errors (S.E.), we were able to get the critical ratio (C.R.) values. At the 0.05 level of significance, a positive effect is more likely if the critical ratio score is greater than 1.96. Each study criterion was found to be statistically significant at the 0.05 level.

The suggested research model's assumptions were checked one by one to make sure everything worked as expected. This guaranteed that the suggested model was based on accurate and trustworthy readings of the variables under investigation. There was a significant positive relationship between the outcome variable "safety performance" and the predictor variables "safety climate" and "safety culture," with a p-value of 0.000. Furthermore, with a p-value of 0.000, safety performance (S.P.) was substantially and positively impacted by the mediator variable, employee engagement (EEG). This result indicated that the variances of the research variables were comparable throughout all dimensions. As may be shown in Table 1, below, safety performance (S.P.) was more likely to be substantially affected by employee engagement (EEG).

Table 1. Correlations matrix and discriminate validity results analysis.

	SP	SC	SCL	EEG
SP	0.926			
SC	0.901	0.955		
SCL	0.858	0.857	0.907	
EEG	0.834	0.812	0.803	0.819

Note: SCL = safety climate; SC =safety culture; EEG = employee engagement; SP = safety performance.

This research aimed to better understand how employee involvement in Indian manufacturing companies influences safety culture and environment, and in turn, safety performance. As the findings emphasise the significance of safety culture, safety environment, and employee involvement in

promoting work- place safety and enhancing safety performance in large-scale manufacturing firms, their implications extend well beyond the scope of this study's immediate geographical area. The results are significant for India, but they are also applicable to other nations and areas that have comparable difficulties guaranteeing a safe workplace. The importance of fostering a good safety atmosphere and spreading a culture of safety is highlighted in this research. Safety culture, safety environment, and safety performance may all be improved by getting workers involved in safety-related activities, as is shown in this research. This finding is in line with other studies that stress the importance of a welcoming and supportive environment when it comes to improving safety performance.

Conclusions

This research looked at how safety environment and culture affected the safety performance of big industrial enterprises in India. It used SPSS regression analysis, growth path modelling, and structural equation modelling with employee engagement as the mediating variable. The results of this research supported the idea that a strong safety culture, a positive safety climate, and active participation from employees are all critical to creating a risk-free workplace. According to the findings, fostering a safety culture and maintaining a safe environment are two of the most important things businesses can do to improve their safety record. Involving workers in safety-related activities and encouraging a feeling of personal accountability for safety are also crucial. In general, the findings of this research have substantial significance for expanding our knowledge of the elements that affect occupational safety performance. Safety performance may be greatly influenced by variables such as employee involvement and a positive safety atmosphere. These findings may be used to improve industrial businesses' safety programmes and foster a more widespread culture of safety. The results of this study provide important insight into the factors that influence safety performance on the job, which can be used to better

develop workplace safety programmes and has important theoretical implications.

References

1. Nordlof, H.; Wiitavaara, B.; Hogberg, H.; Westerling, R. A cross-sectional study of factors influencing occupational health and safety management practices in companies. *J. Saf. Sci.* **2017**, 95, 92–103.
2. Guldenmund, F. The nature of safety culture: A review of theory and research. *J. Saf. Sci.* **2000**, 34, 215–257.
3. Lin, S.C.; Mufidah, I.; Persada, S.F. Safety-culture exploration in Taiwan's metal industries: Identifying the workers' background influence on safety climate. *Sustainability* **2017**, 9, 1965.
4. Griffin, M.A.; Neal, A. Perceptions of safety at work: A framework for linking safety climate to safety performance, knowledge, and motivation. *J. Occup. Health Psych.* **2000**, 5, 347–358.
5. Alruqi, W.M.; Hallowell, M.R.; Techera, U. Safety climate dimensions and their relationship to construction safety performance: A meta-analytic review. *J. Saf. Sci.* **2018**, 109, 165–173.
6. Zohar, D. A group-level model on safety climate: Testing the impact of group climate on micro-accidents in manufacturing jobs. *J. Appl. Psychol.* **2000**, 85, 587–596.
7. Cox, S.J.; Cheyne, A.J.T. Assessing safety culture in offshore environments. *J. Saf. Sci.* **2000**, 34, 111–129.
8. Zohar, D. Thirty years of safety climate research: Reflections and future directions. *J. Accid. Anal. Prev.* **2010**, 42, 1517–1522.
9. Bull, N.T.R.; Moen, B.E. Work-related injuries and occupational health and safety factors in small enterprises Prospective study. *J. Occup. Med.* **2002**, 52, 70–74.
10. Allard, E.; Erickson, J.B.; Delbos, R. Predictors of work-related injuries and illness National survey findings. *J. Int. J. Occup. Environ. Health* **2004**, 8, 542–550.
11. Habtu, Y.; Kumie, A.; Tefera, W. Magnitude and factors of occupational injury among workers in large scale metal manufacturing industries in India. *J. Accid Anal Prev.* **2014**, 1, 1.
12. Tadesse, M.L.; Kumie, A. Status of occupational safety and health practices in selected Indian manufacturing enterprises: A cross-sectional study. *J. BMC Res. Notes* **2019**, 12, 1–10.
13. Huang, Y.H.; Lee, J.; McFadden, A.C.; Murphy, L.A.; Robertson, M. The effects of safety climate and safety communication on worker trust in occupational safety management in petrochemical industries. *J. Saf. Sci.*

2016, 89, 1–9.

14. Department of Environmental Health, Ministry of Health, India. Occupational injury and associated factors among large-scale industrial workers in Addis Ababa. *J. BMC Public Health* **2014**, 14, 466.
15. World Health Organization (WHO). International Labour Organization (ILO) Occupational Safety and Health in Public Health Emergencies: A Manual for Protecting Health Workers and Responders; WHO: Geneva, Switzerland, 2018.
16. Amirah, N.A.; Asma, W.I.; Muda, M.S.; Amin, W.A.A.W.M. Safety Culture in Combating Occupational Safety and Health Problems in the Malaysian Manufacturing Sectors. *J. Asian. Soc. Sci.* **2013**, 9, 182–198.
17. Neal, A.; Griffin, M.A.; Hart, P.M. The impact of organizational climate on safety climate and individual behaviour. *J. Saf. Sci.* **2000**, 34, 99–109.