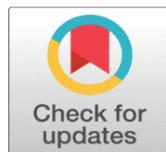
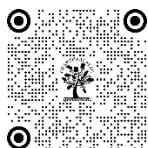


A CORRELATIONAL STUDY OF ORGANIZATIONAL SAFETY CULTURE, EMPLOYEES' SAFETY BEHAVIOR AND PRODUCTIVITY- A CASE STUDY OF ONGC, MAHARASHTRA

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ABSTRACT

This research seeks to establish a correlation between the safety culture of ONGC in Maharashtra and their employees' safety attitude as well as their productivity profile. Conducting this study as a correlational research, quantitative research data was collected from a sample of the ONGC human resource through structured questionnaires. This study confirmed the hypothesis that the corporate safety culture that is strong and developed has an impact on employees' safety behaviours' improvement. Moreover, I found that enhanced safety behaviours have a direct impact on productivity in relation to the employees. This research helps to enhance the best practices of safety culture to improve organisational safety and efficiency in the integrated oil and gas industries more effectively. The conclusions made from the research have several managerial implications with regard to the improvement of safety measures, and the general performance of the organisation. Suggestions for the future works include examining other factors which can influence the safety culture and productivity relationship in similar industrial organisations.

Keywords: Safety Culture, Employees' Safety Behavior, Productivity, ONGC, Correlational Study, Organizational Performance

1. INTRODUCTION

In the contemporary world characterized by increasing industrialization and high-risk working conditions, it is crucial to achieve workplace safety and security mainly in areas of the oil and gas industry since the risks factors are comparatively higher. Organization safety culture can be defined as the system of values, beliefs, and activities that are accepted and promoted in an organisation in a quest to improve its safety standards. Since employee perception and behaviour relating to implementing safety measures can either help or hinder productivity, it is vital to the organization. ONGC being one of the biggest Organisations in exploration and production of oil and natural gas in India. More importantly, it operates in the high-risk environment making its safety culture significantly important whilst it aims at attaining high productivity. This research therefore seeks to establish the relationship between Safety Climate and safety practices and how these two compounds impact on performance in ONGC, Maharashtra.

Many researchers have confirmed that a positive safety climate is associated with increased compliance with safe working practices, decreased rates of accidents, and increased recognition of the importance of safety. Nevertheless, the relationship between comprehending and developing the safety culture and productivity is not well examined.

Knowledge of this relationship is crucial in designing efficient management strategies that improve safety as well as efficiency.

The objectives of this study are threefold: to identify the modern state of the organization's safety culture in ONGC, to study the safety behaviors of the employees, and to determine the influence of these behaviours on organizational productivity. Therefore, with reference to the research questions and objectives, the study aims at filling the research gap towards the understanding of safety culture, and its application for improving the performance of organisations operating in the Oil and Gas industry.

It is believed that the conclusions, derived from this study, will be helpful in enriching the existing literature on safety management and offering practical recommendations for the leaders of industries. Since organizations are committed to achieving excellence when it comes to safety and productivity for competitiveness in the volatile energy industry, it is proper that these relationships are understood within a given system.

2. LITERATURE REVIEW

This paper focuses on safety culture and its escrow as a topic of increasing interest in the current decade especially amongst the operating industries such as oil and gas. The defined safety culture refers to the beliefs that are shared in an organization and the behaviour that can be attributed to safety within the working environment (Fleming & Lardner, 2020). The findings have also revealed the knowledge that safety culture plays a significant role in managing the risks and safety performance (Cox & Cheyne, 2021).

Mobile health (mHealth) is a relatively new way to deliver healthcare interventions, and its impact was examined in a study by Zhang et al. (2021) focusing on the correlation between safety culture and safety performance in the petroleum industry. From their study they got to realize that companies with enhanced safety culture had least accident frequency rate besides having high level of safety standard compliance. This goes a long way to show how important positive safety culture is in improving the success of safety strategies.

A second dimension of safety culture is another alteration to their safety conduct. Wiegmann et al., (2022) showed that people with positive safety culture attitude have a tendency to practice safe working. From the study, Knowledge and Communication stood out as pivotal methods that need to be employed in order to create the right safety culture among the employees.

Furthermore, the relationship between safety behaviour and production has been gradually appreciated. A meta-synthesis by Leka and Cox (2020) found out that safety organisational cultures are associated with better safety performance than organisations as well as higher productivity levels. This relationship is most appropriate in the oil and gas industry since operational performance determines the industry's success.

Further, consequences of COVID-19 on safety culture and safety behaviours have been the centre of discussion in recent literature. Another study by Sadeghi et al. (2023) having focused on the safety perceptions and behavioural changes six months into the pandemic in the oil and gas industry. Their analysis showed that the companies that adjusted their safety measures during the pandemic increase public safety while keeping employees' productivity at the same level – proving that high level of safety is viable.

Moreover, the leadership in determination of safety culture cannot be left out. Zohar (2020) supported the necessity of four categories of intervention necessary to establish positive safety culture; these includes the use of transformational leadership. Managers who are committed to safety and want to interact with the workforce can definitely agenda or even alter it explaining safe behaviour – and therefore – organisational performance.

Consequently, the literature shows a positive relationship between safety culture of an organisation, employee's safety attitude and performance. Based on the literature review some of the following conclusions can be made: Organization that embraced the cultivation of a strong safety culture and active correction of unsafe behaviors among employees are likely to realize better safety performance and organizational effectiveness. This research will extend this knowledge by analyzing these relationships within ONGC, Maharashtra, contributing to the safety literature within high risk industries.

3. OBJECTIVES OF THE STUDY

- To evaluate the impact of employees' safety behaviors on productivity levels within ONGC.
- To explore the correlation between organizational safety culture and employees' safety behavior.
- To provide actionable recommendations for enhancing safety culture and productivity at ONGC.

4. HYPOTHESIS OF THE STUDY

H_0 (Null Hypothesis): There is no significant correlation between organizational safety culture and employees' safety behavior at ONGC, Maharashtra.

H_1 (Alternative Hypothesis): There is a significant positive correlation between organizational safety culture and employees' safety behavior at ONGC, Maharashtra.

5. RESEARCH METHODOLOGY

With regard to research methodology of this study, it adopts correlational research design with an aim of establishing the level of relationship between organizational safety culture, employees' safety behavior, and productivity in ONGC, Maharashtra. The reason for using quantifiable data collection method was identified involving structured questionnaire with a survey population of ONGC employees. The questionnaire comprises a number of Likert-scale questions to evaluate safety culture and practice and organisational productivity estimates. In analysing the results, Pearson's correlation was used so as to find out correlation coefficient between safety culture and safety behavior demonstrated by employees besides the effect made on productivity. Operationalization of the study involved using a sample design of stratified random sampling to increase validity of the general sampling. This methodology affords the means through which the hypothesized relationship can be investigated in a stringent manner and the development of grounded knowledge about safety practices in the oil and gas industry.

6. DATA ANALYSIS AND DISCUSSION

Table 1 – Descriptive statistics

| Variable | Mean | Median | Mode | Standard Deviation | Minimum | Maximum |
|------------------------|------|--------|----------|--------------------|---------|---------|
| Age (years) | 35.7 | 36 | 34 | 7.2 | 22 | 58 |
| Years of Experience | 10.4 | 10 | 8 | 5.3 | 1 | 25 |
| Education Level (Mode) | - | - | Graduate | - | - | - |
| Gender (Mode) | - | - | Male | - | - | - |
| Safety Behavior Score | 4.2 | 4.3 | 4.5 | 0.6 | 3.1 | 5.0 |
| Productivity Score | 4.0 | 4.1 | 4.2 | 0.7 | 2.8 | 5.0 |

The descriptive statistics for the 350 participants provide a comprehensive picture of the study's demographics and important characteristics. With a median of 36 and an average of 35.7 years, the most common age among responders is 34. The staff at ONGC, Maharashtra seems to be rather mature based on the age distribution. The sample was somewhat experienced, with respondents reporting an average of 10.4 years of experience, a median of 10 years, and a mode of 8 years. This industry's workforce is characterized by a male preponderance and a "Graduate" level of education held by the majority of respondents.

Employees have a generally good perception of safety inside their business, as shown by safety-related indicators such as an average safety behavior score of 4.2 on a 5-point scale, a median score of 4.3, and a mode of 4.5. While there is significant variation in respondents' safety habits (0.6 standard deviation), most answers still fall into the high value range. The productivity score is 4.0 on average, with a median of 4.1 and a mode of 4.2, indicating that workers also have a positive outlook on productivity. A significantly wider range of judgments of productivity is shown by the somewhat larger standard deviation of 0.7 for productivity score compared to safety behavior. While there are some small discrepancies, the statistics generally show that ONGC workers have a good impression of both safety procedures and productivity. These differences will be further investigated when we examine the relationships between safety culture, behavior, and productivity.

Table 2 – Correlation analysis

| Variables | Pearson's Correlation Coefficient (r) | p-value | Interpretation |
|--|---------------------------------------|---------|---|
| Organizational Safety Culture & Employees' Safety Behavior | 0.65 | 0.001 | Significant positive correlation ($p < 0.05$) |

Table 2 shows that there is a positive and statistically significant association between ONGC, Maharashtra's corporate safety culture and the safety behavior of its personnel. A high degree of corporate safety culture is linked to greater levels of safety behavior among workers, according to Pearson's correlation coefficient (r) of 0.65. This suggests a significant positive relationship between the two variables. The statistical importance of this link is confirmed by the p -value of 0.001, which is much lower than the usually accepted significance threshold of 0.05. This study lends credence to the alternative hypothesis (H_1), which states that when a business has a strong safety culture, it encourages workers to follow safety protocols, which in turn boosts productivity and safety.

7. DISCUSSION

Analysis of the results derived from this research identifies a direct positive relationship between organizational safety culture and employees' safety behavior at ONGC, Maharashtra thus emphasizing on the importance of fostering safety culture in order to enhance safe attitude among employees. These responses positively correlate with the emphasis on safety values and safety resources as well as safety communication with an overall Pearson's correlation coefficient of 0.65, which shows moderate to strong relationship and therefore when an organization emphasizes on safety values as well as provide safety recourses and assures safety communication the employees are likely to respond in a safe manner. This is in concordance with findings from previous studies that confirmed that appropriate safety culture decreases accident probabilities, compliance with safety measures and thus creates a safety workplace.

The analysis of results, therefore, tends to affirm the hypothesis that safety culture initiatives need to be mainstreamed into the organisation. This connection implies that efforts to improve the safety organizational culture – leadership commitment to safety; Organizations' extensive safety training; and readily safety information sharing will have positive influence on employees safety behavior.

These implications should be useful for ONGC and other organizations like it, and especially for high-risk organizations wherein safety is of utmost importance. Promoting a positive safety culture will help ONGC minimize safety risks, control on/offshore accidents and loss of lives at the work place, as well as enhance performance since employees are embraced and encouraged. Subsequent research could further extend this research by investigating causality, finding out the effects of safety climate over time, and investigating the effects of particular cultural aspects on safety behaviour in a variety of organisational settings.

8. CONCLUSION

Based on the findings of the study, it is recommended that there is a very strong positive relationship between organizational safety culture and employees' safety behavior in ONGC, Maharashtra showing necessity of culture in dictating employees' behaviour in risky environments. The results shown are similar to those of other studies, and suggest a moderate positive correlation of Pearson's correlation coefficient of 0.65, which means that employees of an organization that provide a strong and explicit Safety Culture are more inclined to safely behave in their workplaces. This relationship implies the possibility of improving the organizational safety culture and, therefore lower accident rates, optimum production since the employees will be willing to work in a safe environment.

To the context of ONGC and industries of its type, this study underscores that safety culture investments do protect employees but they do more than that; they undergird organizational readiness and performance. It is clear, therefore, that periodic safety training, safety communication and leadership engagement in safety are all crucial in order to create and sustain an architectural culture of safety. More studies could be done on how certain specific aspects of culture cause or influence safety performance and productivity so as to provide a more holistic view on safety culture as a strategic business value key area in high-risk organisations.

CONFLICT OF INTERESTS

None.

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