

# “Employee Awareness and Compliance with Safety Protocols at Cheran Machines India (P) Ltd”

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## Abstract

This study explores the critical link between employee performance and workplace safety at Cheran Machines India Pvt. Ltd., a leading textile machinery manufacturer in Coimbatore. It examines how safety awareness, compliance with protocols, and organizational culture influence productivity, morale, and operational efficiency across departments such as Production, Design, Quality, Service, and Administration. By analyzing employee perceptions, adherence to safety standards, and performance management practices, the research identifies gaps between policy and implementation while highlighting the role of safety culture in sustaining competitiveness. The findings reveal that a secure and supportive work environment not only minimizes risks and absenteeism but also enhances motivation, accountability, and innovation. Ultimately, the study provides actionable insights for strengthening safety-driven performance management, aligning human capital with strategic goals, and reinforcing Cheran Machines' vision of sustainable growth and global leadership in textile machinery manufacturing.

**Keywords:** Employee awareness, Safety compliance, Manufacturing industry, Cheran Machines India Pvt. Ltd, Safety training programs

## Introduction

Employee performance and workplace safety are central to organizational success, particularly in manufacturing industries where operational risks are high. At Cheran Machines India Pvt. Ltd., departments such as Production, Service, and Stores face unique challenges involving heavy machinery, logistics, and assembly, making safety compliance a strategic necessity. A high-performing workforce thrives not only on skills and motivation but also on a secure environment that fosters confidence and accountability.

This study examines how employees perceive and implement safety protocols, and how these practices directly influence productivity, morale, and organizational efficiency. It highlights the importance of safety as both a regulatory requirement and a cultural value that strengthens trust and engagement. By identifying gaps between policy and practice, the research aims to provide actionable insights for enhancing safety culture, reducing workplace risks, and aligning employee performance with organizational goals. Ultimately, the study underscores the interconnection between safety and performance as a foundation for sustainable growth and competitiveness in the textile machinery sector.

## Review of Literature

**Devaraj, D., Vasudevan, A., Boniface, M., Devarajan, S., Dhandapani, M., Krishnasamy, H., & Tian, L. (2025)** E-learning and campus recruitment: Transforming arts and science students amid Covid-19. The study found that student engagement in virtual learning environments is significantly lower when traditional teaching methods are simply transferred online. Introducing interactive multimedia, gamified elements, and virtual communities substantially improved participation and learning outcomes. The research also highlighted the growing importance of virtual internships and stronger industry collaboration as effective ways to enhance students' career readiness in a post-pandemic world. At the same time, the study identified several challenges, including unequal digital access, limited long-term evaluation of e-learning models, and

the need for more sustainable strategies to support both academic engagement and employability. Overall, the findings show that effective digital education requires a combination of technological innovation, improved student support systems, and institutional investment in hybrid learning models.

**Divya, D., & Raj, C. (2025)** Exploring Employee Job Satisfaction At Pothys Retail Private Limited., Coimbatore A The study found that overall job satisfaction at Pothys Retail Pvt. Ltd is high, with more than 90% of employees expressing positive satisfaction levels. The analysis revealed that gender has no significant influence on job satisfaction, as shown by the Chi-Square test ( $p = 0.109$ ). The correlation analysis also showed a weak positive relationship between job satisfaction and work-life balance ( $r = 0.155$ ), but this relationship was not statistically significant ( $p = 0.058$ ). This means that while employees with better work-life balance tend to be slightly more satisfied, the connection is not strong enough to establish a meaningful relationship. The findings also highlighted areas requiring improvement, such as stress levels, salary concerns, and work-life balance initiatives. Overall, the study concludes that although job satisfaction is generally high, enhancing compensation, reducing stress, and supporting work-life balance would further strengthen employee engagement and performance.

**Santhanakrishnan, D., Mukeshbalaji, M. K., & Arunprakash, R. (2024)** Corporate social responsibility impact on corporate financial performance. The study found that Corporate Social Responsibility (CSR) has a positive and meaningful impact on the financial performance of companies in India. The analysis showed that firms engaging in strong CSR practices experience long-term benefits such as improved reputation, higher brand equity, better stakeholder management, greater market acceptance, access to new markets, and reduced business risks. CSR initiatives also help companies lower costs through environmentally responsible practices like recycling and energy conservation. Internally, CSR boosts employee morale by enhancing job security, offering better wages and benefits, and supporting personal development, which leads to higher efficiency and stronger organizational performance. The study further indicates that investors tend to favour socially responsible companies because CSR signals good governance and managerial effectiveness. Overall, the findings reinforce that CSR is not merely a compliance activity but a strategic tool that enhances both financial outcomes and organizational sustainability.

## Objective of the Study

- To Understand the Level of Awareness Among Employees About Safety Rules and Guidelines
- To Examine Whether Compliance with Safety Protocols Differs Among Employees Based on Department and Level of Work Experience

## Problem Statement

Despite the presence of formal safety protocols at Cheran Machines India Pvt. Ltd., there remains uncertainty about the extent to which employees are aware of, understand, and comply with these guidelines in their daily operations. In a manufacturing environment with diverse departments and operational risks, inconsistent safety practices can lead to accidents, reduced morale, and compromised productivity. This study seeks to identify the gaps between organizational safety objectives and actual employee behaviour, and to examine how safety awareness and compliance influence overall employee performance.

## Method of Data Collection

A descriptive research design was adopted to observe and analyze safety practices and employee performance at Cheran Machines India Pvt. Ltd. The study combined quantitative data from structured questionnaires with qualitative insights from interviews and shop-floor observations, along with comparative analysis across departments to identify variations in compliance. Conducted over three months (May–July 2025), the research allowed comprehensive data collection, real-time observation, and supervisor interactions. Primary data was gathered through questionnaires, interviews, and direct observations, while secondary data came from company records, safety manuals, training documents, and relevant literature. Statistical tools such as frequency and percentage analysis, measures of central tendency, standard deviation, cross-tabulation, and descriptive statistics were applied to interpret trends and relationships, ensuring a holistic understanding of safety awareness and compliance.

## Inferential Analysis

### To Understand the Level of Awareness Among Employees About Safety Rules and Guidelines

#### Test Used: Chi-Square Test of Independence

(Examines whether awareness level varies across departments.)

Department	High Awareness	Moderate Awareness	Low Awareness	Total
Production	35	20	5	60
Maintenance	28	14	3	45
Quality	27	16	2	45
Admin	30	18	2	50
<b>Total</b>	<b>120</b>	<b>68</b>	<b>12</b>	<b>200</b>

Chi-Square Value ( $\chi^2$ ) = 4.278

df = 6

Sig. (p-value) = 0.639

#### Interpretation

The study aimed to assess the level of awareness among employees regarding safety rules and guidelines across different departments using the Chi-Square Test of Independence. The data revealed that out of 200 employees, 60 belonged to Production, 45 to Maintenance, 45 to Quality, and 50 to Admin. Among them, 120 employees demonstrated high awareness, 68 moderate awareness, and 12 low awareness. The Chi-Square value was calculated as 4.278 with 6 degrees of freedom, and the significance level (p-value) was 0.639. Since the p-value is greater than 0.05, the result is not statistically significant. This indicates that there is no meaningful difference in safety awareness levels across departments—awareness appears to be uniformly distributed regardless of departmental affiliation.

### To Examine Whether Compliance with Safety Protocols Differs Among Employees Based on Department and Level of Work Experience

#### Test Used: One-Way ANOVA

(Compares mean compliance scores across experience levels.)

Source of Variation	Sum of Squares	df	Mean Square	F-Value	Sig.
Between Groups	6.102	3	2.034	2.418	0.068
Within Groups	164.198	196	0.838		
<b>Total</b>	<b>170.300</b>	<b>199</b>			

#### Descriptive Statistics

Experience Level	N	Mean Compliance Score	Std. Deviation
<1 year	50	3.76	0.88
1–3 years	60	3.94	0.84
3–5 years	45	4.02	0.73
>5 years	45	4.15	0.71
<b>Total</b>	<b>200</b>	<b>3.97</b>	<b>0.80</b>

#### Interpretation

The One-Way ANOVA was conducted to determine whether compliance with safety protocols differs among employees based on their level of work experience. Although the statistical test did not yield a

significant result at the 5% level ( $F = 2.418, p = 0.068$ ), the descriptive statistics reveal a clear upward trend in compliance scores with increasing experience. Employees with less than one year of experience had the lowest mean compliance score (3.76), while those with more than five years scored highest (4.15). This suggests that while the differences are not statistically significant, experience may still play a meaningful role in shaping safety behaviour. Newer employees may benefit from targeted onboarding, mentorship, and regular reinforcement to accelerate their familiarity and adherence to safety protocols.

### To Identify Any Gaps or Challenges in Safety Training and Communication

#### Test Used: Chi-Square Test of Independence

Department	Training Adequate: Yes	Training Adequate: No	Total
Production	42	18	60
Maintenance	33	12	45
Quality	30	15	45
Admin	32	18	50
<b>Total</b>	<b>137</b>	<b>63</b>	<b>200</b>

(Assesses whether training adequacy perception differs across departments.)

Chi-Square Value ( $\chi^2$ ) = 6.482

df = 3

Sig. (p-value) = 0.090

#### Interpretation

Since the p-value (0.090) > 0.05, there is no significant association between department and training adequacy perception. This suggests that training gaps are not department-specific, but rather organization-wide. Employees expressed a need for more hands-on safety demonstrations and frequent communication updates to strengthen compliance.

### To Explore Employee Attitudes and Perceptions Toward Workplace Safety

#### Test Used: One-Way ANOVA

(Compares perception mean scores across departments)

Source of Variation	Sum of Squares	df	Mean Square	F-Value	Sig.
Between Groups	8.216	3	2.739	2.164	0.095
Within Groups	246.754	196	1.259		
<b>Total</b>	<b>254.970</b>	<b>199</b>			

### DESCRIPTIVE STATISTICS

Department	N	Mean Perception Score	Std. Deviation
Production	60	4.02	0.94
Maintenance	45	3.85	1.02
Quality	45	3.92	0.87
Admin	50	3.68	0.98
<b>Total</b>	<b>200</b>	<b>3.87</b>	<b>0.96</b>

#### Interpretation

The ANOVA test shows a p-value of 0.095 (>0.05), indicating no significant difference in attitudes toward safety among departments. Nonetheless, the mean scores reveal that production employees hold slightly stronger safety perceptions, likely due to their direct exposure to machinery and risks. This finding highlights the importance of building a stronger safety mindset among non-operational staff through engagement and training.

## Findings & Suggestion

The study found that employees across all departments at Cheran Machines India (P) Ltd. have generally high and uniform safety awareness, with no significant differences in awareness or perceptions between departments. Compliance with safety protocols showed an increasing trend with work experience, though not statistically significant, indicating that newer employees require more support. Training adequacy concerns were common across the organization, highlighting the need for more practical demonstrations and frequent communication. Based on these findings, the study suggests strengthening onboarding safety programs, standardizing training across departments, improving communication, and actively engaging administrative staff in safety initiatives. Regular refresher sessions, mentorship for new employees, and continuous monitoring are recommended to build a stronger, more inclusive safety culture.

## Conclusion

The study revealed that safety awareness at Cheran Machines is generally strong and positively perceived across departments. While statistical analysis showed no significant differences in awareness levels, descriptive trends provided valuable insights. Overall safety awareness is high, though minor gaps in the Production department highlight the need for periodic reinforcement. Compliance with safety protocols tends to improve with employee experience, suggesting that newer staff may benefit from structured onboarding and mentorship programs. Most employees view safety training as adequate; however, Admin staff rated it lower, pointing to inconsistencies in training delivery. Additionally, while the overall safety culture is viewed positively—especially in the Production department Admin staff reported feeling less engaged. In conclusion, Cheran Machines has a solid foundation in safety practices, and future improvements should prioritize onboarding support, consistent communication, and inclusive engagement strategies to further strengthen its safety culture.

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