

# Impact of Discounts and Offers on Customer Purchase Intent.

M MADHUBALAN<sup>1</sup>, DR V KAARTHIEKHEYAN<sup>2</sup>

<sup>1</sup>Student, Dept. of Management Science (MBA)

<sup>2</sup> Professor, Dept. of Management Science (MBA), Hindusthan College of Engineering and Technology, Coimbatore

*Abstract- The fireworks industry in India plays a pivotal role in small-scale manufacturing, contributing significantly to employment generation and export earnings, particularly in the Sivakasi cluster of Tamil Nadu. This research paper examines the production operations, safety management practices, and organizational performance of Sony S. Pirotecnia — a leading fireworks manufacturer based in Sivakasi — through an internship-based study. The study draws on both primary data collected from 80 respondents through structured observation and informal interviews, and secondary data sourced from textbooks, journals, and industry reports. The paper applies descriptive analysis, percentage analysis, Chi-square testing, and Pearson correlation to assess the relationships between key operational variables. The findings reveal that the workforce is predominantly young (21–30 age group) with moderate experience, skilled labor is the organization's core strength, and lack of modern technology and inconsistent safety compliance are its primary weaknesses. Hypothesis testing indicates no statistically significant relationship between safety training received and employees' subjective feeling of safety (Chi-square = 0.761, p = 0.383). Overall satisfaction among employees is positive, but significant gaps remain in safety equipment usage, universal training coverage, and technological modernization. The paper recommends mandatory safety compliance enforcement, organization-wide training programs, technology adoption, and improved wage policies. The study contributes to the limited literature on safety and operational management in small-scale hazardous manufacturing enterprises in India and offers practical recommendations for industry stakeholders, policymakers, and academic researchers.*

**Key words:** Fireworks Industry, Safety Management, Production Operations, Sivakasi, Small-Scale Manufacturing, Employee Satisfaction, Organizational Performance

## I. INTRODUCTION

### 1.1 Background of the Study

India's small-scale manufacturing sector is a cornerstone of the national economy, providing livelihoods to millions while contributing meaningfully to the country's GDP and export basket. Within this sector, the fireworks industry holds a unique and culturally significant position. The town of Sivakasi in Tamil Nadu's Virudhunagar district has earned the global distinction of being the 'Fireworks Capital of India,' accounting for nearly 90% of India's total fireworks production and a substantial share of its match and printing industries.

The fireworks industry is deeply intertwined with Indian cultural and religious traditions. From the national celebration of Diwali to regional festivals, weddings, and public events, the demand for fireworks is both seasonal and enormous. This creates a peculiar business dynamic — organizations must build and sustain capacity for massive output bursts while managing the inherent risks associated with pyrotechnic manufacturing year-round.

Sony S. Pirotecnia is a well-established company operating within this ecosystem. It is involved in the manufacturing and distribution of a wide range of fireworks products, employing both skilled and semi-skilled labor in its production facilities. Like most companies in this sector, it operates within a tightly regulated framework governed by the Petroleum and Explosives Safety Organisation (PESO) and various environmental and labor legislation.

Understanding the functioning of such an organization — its production workflow, safety architecture, employee management practices, and

operational challenges — offers rich learning opportunities at the intersection of business management, industrial safety, and social responsibility. This study, conducted during a structured internship at Sony S. Pirotecnia, seeks to capture these learnings and present them in a rigorous academic framework appropriate for undergraduate commerce and management students.

### 1.2 Problem Statement

Despite being a critically important sector, the fireworks industry in India faces a complex web of challenges that threaten its sustainability, safety record, and long-term competitiveness. The manufacture of fireworks involves handling hazardous chemicals — including potassium nitrate, sulfur, aluminum powder, and charcoal — under conditions that demand the highest safety vigilance. Accidents in fireworks factories can be devastating, resulting in fatalities, injuries, and irreversible reputational damage.

At the organizational level, companies like Sony S. Pirotecnia must navigate competing pressures: the need to fulfill large seasonal orders rapidly, the imperative to protect worker safety, mounting environmental regulations aimed at reducing harmful emissions from fireworks, and increasing market competition from domestic and international players. The coexistence of these pressures often creates operational tensions that, if poorly managed, can lead to compromised safety practices, inconsistent quality, and employee dissatisfaction.

Moreover, the academic literature on safety and operations management in small and medium-sized enterprises (SMEs) within the Indian hazardous manufacturing sector remains thin. Most existing research focuses on large industrial setups, leaving a knowledge gap regarding how smaller, labor-intensive fireworks companies actually implement (or fail to implement) safety standards and management best practices in daily operations. This study seeks to fill a portion of that gap through empirical observation and analysis.

### 1.3 Objectives of the Study

The study is guided by the following specific objectives:

- To understand the manufacturing process at Sony S. Pirotecnia, including raw material procurement, chemical mixing, assembly, drying, and packaging stages.
- To examine the safety management practices in place and evaluate their effectiveness in protecting workers from occupational hazards.
- To analyze the organizational structure, interdepartmental coordination, and management practices within the company.
- To assess employee perceptions of working conditions, safety, training adequacy, and overall job satisfaction.
- To identify key strengths and weaknesses in the company's operations and suggest evidence-based recommendations for improvement.
- To test the hypothesis that safety training is significantly associated with employees' subjective sense of safety at the workplace.

## II. LITERATURE REVIEW

### 2.1 Summary of Previous Research

The academic study of small-scale manufacturing industries in India has grown considerably over the past two decades, driven by recognition of the sector's outsized contribution to employment and economic output. Researchers have examined industries ranging from textile clusters in Tiruppur and Surat to leather goods in Agra and fireworks in Sivakasi. These studies collectively highlight that SMEs in India often face structural challenges including limited access to capital and technology, dependence on informal labor markets, and vulnerability to regulatory changes.

Research specifically focused on the Sivakasi fireworks cluster has documented both its impressive economic output and its troubling safety record. Studies published in journals such as the *Indian Journal of Occupational and Environmental Medicine* have highlighted the high incidence of occupational injuries and respiratory illnesses among fireworks workers, attributing these to exposure to hazardous chemicals, long working hours, and inadequate use of personal protective equipment (PPE).

In the broader literature on occupational safety in hazardous industries, there is robust evidence that safety training, supervisory commitment, and a strong safety culture are the most reliable predictors of accident prevention. Heinrich's Triangle, a foundational concept in safety science, posits that for every major accident, there are hundreds of near-miss incidents and thousands of unsafe behaviors — suggesting that behavioral and cultural interventions are as important as physical safeguards.

On the operations management front, research drawing on Taylor's Scientific Management tradition emphasizes standardization and specialization in labor-intensive manufacturing. Lean manufacturing principles — originally developed in automotive contexts — have also been applied to small-scale Indian manufacturers, demonstrating measurable productivity improvements when waste is systematically eliminated and workflows are rationalized.

## 2.2 Key Findings from Different Authors

Philip Kotler (2009) established that effective business operations depend on proper planning, resource utilization, and customer-focused strategies. His work on aligning production with market demand is especially relevant to seasonal industries like fireworks, where demand spikes around festivals require advance planning, inventory build-up, and rapid distribution capability.

Frederick Winslow Taylor (1911) laid the groundwork for modern production management with his principles of scientific management — systematic task analysis, standardization, and the separation of planning from execution. In the fireworks context, Taylor's principles are particularly relevant to the organization of production cells, where each stage (mixing, assembly, drying, packing) requires precisely defined procedures to minimize error and hazard.

Maslow's Hierarchy of Needs (1943) is directly applicable to the fireworks workforce, where basic safety and physiological needs must be addressed before higher-order motivational factors can be meaningful. Research on worker motivation in hazardous manufacturing suggests that when workers

feel physically unsafe, no amount of performance incentive can compensate for this underlying insecurity.

Studies by the International Labour Organization (ILO) on occupational safety in developing countries document that SMEs are disproportionately affected by workplace accidents, largely because they lack the resources for comprehensive safety programs that larger corporations take for granted. The ILO recommends a graduated approach to safety compliance — beginning with the most hazardous operations and progressively extending coverage.

Indian researchers such as Krishnamurthy (2018) have documented that Sivakasi's fireworks industry, despite its economic vitality, continues to face challenges in modernizing its safety infrastructure. His study found that while most factories nominally comply with PESO regulations, enforcement of day-to-day safety behaviors such as PPE usage and fire-break maintenance remains inconsistent.

## 2.3 Identification of Research Gap

Despite the body of literature reviewed above, several significant gaps remain. First, most studies treat the Sivakasi fireworks industry as a homogeneous entity, without distinguishing between larger, more mechanized operations and smaller, predominantly manual manufacturers like Sony S. Pirotecnica. Firm-level heterogeneity matters enormously for understanding safety and operations management.

Second, the literature lacks longitudinal data on how individual firms' safety cultures and operational practices evolve over time, particularly in response to regulatory changes, accident events, or management transitions. Most studies are cross-sectional snapshots.

Third, while the relationship between safety training and accident rates is well-documented in large industrial settings, it has rarely been tested rigorously in small fireworks manufacturing units. The present study's hypothesis testing contributes modestly to this gap.

Fourth, the role of workforce demographics — particularly the age and experience profile of workers

— in shaping safety behavior and operational performance has received insufficient attention in the Indian SME context. This study's demographic data provides a contribution in this direction.

### III. RESEARCH METHODOLOGY

#### 3.1 Type of Research

This study adopts a mixed-methods approach, combining qualitative and quantitative research strategies. The qualitative component involves descriptive analysis of observed processes, informal interviews, and field notes gathered during a one-month internship at Sony S. Pirotecnia in Sivakasi. The quantitative component involves structured data collection from 80 respondents using a questionnaire, followed by statistical analysis using percentage analysis, Chi-square testing, and Pearson correlation. The research is primarily descriptive in nature, aimed at accurately portraying the current state of operations, safety practices, and organizational performance at the study site. It does not seek to establish causal relationships (beyond the hypothesis test) but rather to provide a comprehensive, evidence-based picture of the organization for academic and practical purposes.

#### 3.2 Data Collection Methods

Primary data was collected through three main channels. First, systematic observation of the manufacturing process across all production stages — raw material handling, chemical preparation, assembly, drying, and packaging — was conducted throughout the internship period. Second, informal semi-structured interviews and discussions were held with workers, supervisors, and department heads to gather their perspectives on operational processes, safety practices, and organizational culture. Third, a structured questionnaire was administered to 80 respondents drawn from across the workforce, covering demographic variables, perceptions of safety, training, technology usage, and overall satisfaction.

Secondary data was collected from published textbooks on operations management, safety management, and organizational behavior; peer-reviewed journal articles accessed through academic databases; government reports from PESO and the

Ministry of Labour; and industry publications from the Fireworks Manufacturers Association of India (FMAI).

#### 3.3 Tools and Techniques Used

The following analytical tools and techniques were employed in this study:

- **Percentage Analysis:** Used to convert raw frequency data from the questionnaire into proportions, enabling easy comparison across categories such as age, gender, experience, and response patterns.
- **Bar Charts and Pie Charts:** Graphical representation of percentage data to visually communicate distribution patterns and dominant trends.
- **Comparative Analysis:** Used to compare theoretical frameworks from the literature with observed practices at Sony S. Pirotecnia.
- **Chi-Square Test:** Applied to test the hypothesis of association between safety training received and employees' feeling of safety at the workplace.
- **Pearson Correlation Coefficient:** Used to measure the strength and direction of the linear relationship between safety training and feeling of safety.
- **SWOT-informed Analysis:** Observations were organized into strengths, weaknesses, opportunities, and threats to provide a structured organizational assessment.

#### 3.4 Sampling Design

A convenience sampling approach was adopted, which is appropriate for internship-based research where access is determined by organizational context rather than probabilistic sampling frames. The sample of 80 respondents was drawn from workers, supervisors, managers, and other staff categories across the company's production and administrative departments. While this sample cannot be claimed to be statistically representative of the broader fireworks industry, it provides meaningful insights into the organizational context of Sony S. Pirotecnia and, by extension, similar firms in the Sivakasi cluster.

IV. DATA ANALYSIS AND INTERPRETATION

4.1 Descriptive Analysis of Respondents

Table 4.1: Age Distribution of Respondents

| Age Group      | No. of Respondents | Percentage (%) |
|----------------|--------------------|----------------|
| Below 20       | 10                 | 12.5%          |
| 21–30 years    | 35                 | 43.75%         |
| 31–40 years    | 20                 | 25.0%          |
| Above 40 years | 15                 | 18.75%         |
| Total          | 80                 | 100%           |

Interpretation: The majority of respondents (43.75%) fall in the 21–30 age bracket, confirming that Sony S. Pirotecnia's workforce is predominantly young. This has important implications for both operational energy and safety behavior, as younger workers may take greater risks and may benefit more from structured safety induction programs. The presence of experienced workers above 40 (18.75%) suggests a blend of youthful dynamism and seasoned expertise.

Table 4.2: Gender Distribution

| Gender | No. of Respondents | Percentage (%) |
|--------|--------------------|----------------|
| Male   | 50                 | 62.5%          |
| Female | 30                 | 37.5%          |
| Total  | 80                 | 100%           |

Interpretation: The workforce has a male majority (62.5%), yet the significant presence of female workers (37.5%) reflects the broader pattern in Sivakasi, where women have historically been important contributors to fireworks production, particularly in hand-assembly operations. This gender composition underlines the need for gender-sensitive safety protocols and welfare provisions.

Table 4.3: Work Experience Distribution

| Experience       | No. of Respondents | Percentage (%) |
|------------------|--------------------|----------------|
| Less than 1 year | 15                 | 18.75%         |
| 1–3 years        | 30                 | 37.5%          |
| 3–5 years        | 20                 | 25.0%          |
| Above 5 years    | 15                 | 18.75%         |

| Experience | No. of Respondents | Percentage (%) |
|------------|--------------------|----------------|
| Total      | 80                 | 100%           |

Interpretation: The largest cohort (37.5%) has between one and three years of experience, suggesting a moderately experienced workforce. New entrants (those with less than one year) constitute 18.75% — a proportion large enough to warrant dedicated onboarding and safety orientation programs. Seasoned workers with over five years' experience form 18.75% of the sample, representing a valuable institutional knowledge base.

Table 4.4: Key Safety Practice Indicators

| Safety Indicator                     | Positive Response | Percentage (%) |
|--------------------------------------|-------------------|----------------|
| Safety training received             | 45 out of 80      | 56.25%         |
| Safety rules always followed         | 30 out of 80      | 37.5%          |
| Safety equipment always used         | 25 out of 80      | 31.25%         |
| Overall feeling of safety            | 50 out of 80      | 62.5%          |
| Safety measures rated Good/Excellent | 50 out of 80      | 62.5%          |

Interpretation: There is a notable disconnect in the safety data. While 62.5% of employees report feeling safe and rate safety measures as good or excellent, only 37.5% say they always follow safety rules and just 31.25% always use safety equipment. This paradox — feeling safe despite inconsistent compliance — is a recognized pattern in behavioral safety literature. It may reflect normalization of risk, overconfidence, or social desirability bias in self-reporting. The implication is that the organization must focus on behavioral safety reinforcement rather than simply relying on training programs.

Table 4.5: Organizational Strengths and Weaknesses (Respondent Perceptions)

| Factor            | Category | % Respondents |
|-------------------|----------|---------------|
| Skilled workers   | Strength | 37.5%         |
| Quality products  | Strength | 25.0%         |
| Strong management | Strength | 18.75%        |

| Factor                     | Category | % Respondents |
|----------------------------|----------|---------------|
| Safety measures            | Strength | 18.75%        |
| Lack of technology         | Weakness | 31.25%        |
| Safety issues              | Weakness | 25.0%         |
| Low wages                  | Weakness | 25.0%         |
| Seasonal demand dependency | Weakness | 18.75%        |

Interpretation: Skilled labor is the company's most recognized strength, identified by 37.5% of respondents. This is consistent with Sivakasi's long tradition of craft-based pyrotechnic expertise passed down across generations. On the weakness side, the lack of modern technology (31.25%) is the dominant concern, followed by safety issues and low wages (25% each). These weaknesses form a coherent pattern: insufficient automation creates heavier reliance on manual labor, which in turn amplifies safety risks and worker fatigue while limiting the ability to offer competitive wages.

#### 4.2 Hypothesis Testing

##### Chi-Square Test: Safety Training vs. Feeling of Safety

Null Hypothesis (H0): There is no significant relationship between safety training received and the feeling of safety among employees.

Alternative Hypothesis (H1): There is a significant relationship between safety training received and the feeling of safety among employees.

| Test Statistic        | Value | df | p-value (2-sided) |
|-----------------------|-------|----|-------------------|
| Pearson Chi-Square    | 0.761 | 1  | 0.383             |
| Continuity Correction | 0.512 | 1  | 0.474             |
| Likelihood Ratio      | 0.768 | 1  | 0.381             |
| N of Valid Cases      | 80    | —  | —                 |

Result and Interpretation: The Pearson Chi-square value of 0.761 (df = 1, p = 0.383) is well above the conventional significance threshold of 0.05. Accordingly, the null hypothesis is accepted. There is

no statistically significant relationship between whether an employee has received safety training and whether they feel safe at work.

This finding, though counterintuitive, is consistent with some behavioral safety literature that distinguishes between formal training exposure and the internalization of safety attitudes. Receiving a training session does not automatically translate to felt safety — particularly if the training is infrequent, if safety equipment is uncomfortable or unavailable, or if supervisory culture does not consistently reinforce safe behavior. Real-world examples from industries like mining and construction similarly show that training alone, without sustained behavioral reinforcement and managerial modeling, has limited impact on safety perception.

##### Pearson Correlation: Safety Training vs. Feeling of Safety

| Variable Pair                       | Pearson r | Sig. (2-tailed) | N  |
|-------------------------------------|-----------|-----------------|----|
| Safety Training ↔ Feeling of Safety | 0.089     | 0.432           | 80 |

The Pearson correlation coefficient of  $r = 0.089$  confirms a very weak positive association between safety training and feeling of safety — one that does not approach statistical significance ( $p = 0.432$ ). This corroborates the Chi-square result and reinforces the conclusion that safety training, as currently implemented, is not a sufficient determinant of worker safety perception. Broader cultural, supervisory, and infrastructural factors are likely to be more influential.

## V. RESULTS AND DISCUSSION

### 5.1 Key Outcomes

The study of Sony S. Pirotecnia reveals a company that is operationally competent in its core manufacturing activities but faces significant structural challenges in safety management, technological modernization, and workforce development. The key outcomes are summarized below.

Production operations are organized across well-defined stages — raw material procurement, chemical mixing, assembly, drying, and packaging — with clear division of labor. The majority of respondents (75%) rated production efficiency as good or very good, indicating effective operational management at the production floor level. Raw material availability is generally reliable, with 43.75% reporting always-available supply chains, though 18.75% flag occasional shortages.

Safety management is the organization's most pressing concern. While nominal safety structures exist — training programs, equipment availability, supervisory oversight — compliance is inconsistent. Only 37.5% of employees always follow safety rules, and merely 31.25% consistently use safety equipment. Safety training has not reached all employees (43.75% lack it), and hypothesis testing confirms that receiving training does not reliably translate to workers feeling safe.

Employee demographics reveal a young, moderately experienced workforce that is broadly satisfied with working conditions (62.5% satisfied or highly satisfied) but retains significant pockets of dissatisfaction (18.75% dissatisfied). Wage levels and limited technological advancement are frequently cited grievances.

### 5.2 Linkage with Objectives

With respect to Objective 1 (understanding the manufacturing process), the study documents all key production stages and identifies how labor and materials are organized within the factory. The multi-stage chemical process demands precision and adherence to sequencing, which underlines the importance of scientific management principles in this context.

With respect to Objective 2 (examining safety practices), the study finds significant gaps between formal safety structures and behavioral implementation. This finding is consistent with the literature gap identified in Chapter 2, confirming that documented safety policies do not automatically produce safe behavior on the shop floor.

Regarding Objective 3 (organizational structure), the hierarchical structure with workers, supervisors, managers, and support staff creates clear chains of command. However, coordination gaps persist, with 25% of respondents disagreeing that interdepartmental coordination is effective.

Regarding Objective 4 (employee perceptions), the data reveals a workforce that is broadly positive but harbors specific concerns around safety, wages, and training equity. The 37.5% of employees who do not feel safe constitute a priority group for intervention.

Regarding Objective 5 (strengths and weaknesses), skilled labor and quality products are confirmed strengths, while lack of technology, safety gaps, and low wages are confirmed weaknesses — findings with direct implications for strategic planning.

Regarding Objective 6 (hypothesis testing), the null hypothesis is accepted, confirming that safety training alone is insufficient for producing a felt sense of safety — a nuanced finding with practical implications for how the company designs its safety improvement programs.

## VI. CONCLUSION

### 6.1 Summary of Findings

This study has provided a detailed empirical examination of production operations, safety management, and organizational performance at Sony S. Pirotecnia, Sivakasi. Drawing on primary data from 80 respondents and qualitative observations during a one-month internship, the research offers the following consolidated conclusions.

The company operates a well-organized production system that leverages its skilled, predominantly young workforce to deliver quality fireworks products across the full product range. Operational efficiency is generally well-regarded by employees, and raw material supply chains are mostly reliable. These factors support the company's competitive position in the Sivakasi cluster.

However, safety management represents the most critical area requiring urgent attention. The inconsistency between formal safety provisions and

actual employee behavior — manifested in low PPE usage rates, incomplete training coverage, and the absence of a statistically significant link between training received and safety perception — indicates that the company's safety culture remains underdeveloped. This is a systemic risk that, in a pyrotechnics manufacturing context, can have catastrophic consequences.

Technological underdevelopment is the second major structural challenge. Over half the workforce believes modern technology is underutilized, and this perception is linked to concerns about both efficiency and safety, since automation can reduce human exposure to chemical hazards.

Employee satisfaction, while broadly positive, is tempered by concerns about wages, training equity, and working conditions — factors that, if unaddressed, may contribute to turnover, reduced motivation, and increased risk-taking behavior.

## 6.2 Suggestions and Recommendations

Based on the findings, the following recommendations are offered to Sony S. Pirotecnia's management and, by extension, to similar firms in the Sivakasi fireworks industry:

- **Implement a Zero-Tolerance Safety Compliance Policy:** Move from voluntary to mandatory safety protocols, backed by clear consequences for non-compliance. Install safety officers at each production stage to monitor real-time adherence.
- **Universal and Regular Safety Training:** Redesign safety training as a continuous program rather than a one-time induction. Conduct quarterly refresher sessions, and ensure 100% employee coverage — including seasonal and new workers.
- **Mandatory PPE Usage with Monitoring:** Issue personal protective equipment to every worker and implement supervisor-led inspections. Use visual management tools (signage, color-coding, checklists) to normalize PPE usage across the factory floor.
- **Invest in Technology and Automation:** Prioritize automation in the most hazardous stages — particularly chemical mixing and

drying — to reduce human exposure. Government schemes such as the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) and MSME technology upgradation subsidies should be explored.

- **Revise Wage Structure:** Benchmark wages against industry standards and link increments to performance and tenure. Explore profit-sharing or productivity bonus schemes to improve motivation and retention.
- **Strengthen Interdepartmental Coordination:** Institute weekly cross-departmental coordination meetings and establish a shared dashboard for production, safety, and inventory data.
- **Develop an Eco-Friendly Product Line:** In anticipation of tightening environmental regulations, invest in R&D for low-emission fireworks. This opens access to premium market segments and reduces regulatory risk.
- **Conduct Annual Employee Satisfaction Surveys:** Institutionalize feedback mechanisms so that management has ongoing visibility into workforce concerns before they escalate into retention or safety issues.

## 6.3 Limitations of the Study

This study is subject to several limitations that should be acknowledged. First, the sample is restricted to one organization and one month of observation, limiting generalizability. Second, the convenience sampling method introduces potential selection bias. Third, self-reported questionnaire data on sensitive topics such as safety compliance may be subject to social desirability bias. Fourth, the study lacks longitudinal data to track changes in practices over time. Future research should address these limitations through larger, multi-firm samples, longitudinal designs, and the use of observational safety audits alongside self-report measures.

## REFERENCES

- [1] Kotler, P., & Keller, K. L. (2009). *Marketing management* (13th ed.). Pearson Education.
- [2] Taylor, F. W. (1911). *The principles of scientific management*. Harper & Brothers.

- [3] Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, 50(4), 370–396. <https://doi.org/10.1037/h0054346>
- [4] International Labour Organization. (2020). *Safety and health at work: A vision for sustainable prevention*. ILO Publications. <https://www.ilo.org/safework>
- [5] Krishnamurthy, S. (2018). Occupational safety in the Sivakasi fireworks cluster: Gaps between regulation and practice. *Indian Journal of Occupational and Environmental Medicine*, 22(3), 145–152.
- [6] Petroleum and Explosives Safety Organisation (PESO). (2022). *Guidelines for manufacture, storage, and transport of explosives*. Ministry of Commerce and Industry, Government of India. <https://www.peso.gov.in>
- [7] Singh, R., & Pandey, A. (2021). Safety management in small-scale hazardous manufacturing industries: A review. *International Journal of Industrial Safety and Management*, 14(2), 78–92.
- [8] Fireworks Manufacturers Association of India (FMAI). (2023). *Annual report on the Indian fireworks industry*. FMAI Publications.
- [9] Dessler, G. (2020). *Human resource management* (16th ed.). Pearson Education India.
- [10] Robbins, S. P., & Coulter, M. (2018). *Management* (14th ed.). Pearson Education.
- [11] Heinrich, H. W. (1931). *Industrial accident prevention: A scientific approach*. McGraw-Hill.
- [12] Ministry of Labour and Employment. (2023). *Annual report 2022–23*. Government of India. <https://labour.gov.in>