

# Safety Measures And Satisfaction In Work Environment: Chennai Metro Project Construction Workers' Perception

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## Abstract

*This study investigates the awareness and satisfaction levels of construction workers regarding safety and welfare measures in Chennai Projects, particularly in projects undertaken by the Chennai Metro. The research explores the alignment between safety policies and their implementation at worksites, analyzing factors such as demographic influences and contractor practices. Findings reveal that while satisfaction levels appear higher than awareness, the overall awareness of safety protocols and provisions remains inadequate, highlighting the need for targeted educational interventions. The study emphasizes the moral and legal responsibilities of employers to ensure safe work environments and explores implications for future safety program improvements.*

**Keywords:** Safety policies, workplace hazards, construction workers, safety awareness, safety satisfaction, welfare measures, occupational health, demographic factors, Chennai metro contractor evaluation.

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## INTRODUCTION

### Importance of Safety in the Workplace

Safety policies and programs are essential for protecting employees from hazards arising from their employment. These programs not only aim to prevent accidents but also to minimize the resulting damage to persons and property. They are inherently linked to the work system, as both health and safety programs work toward protecting workers from potential hazards. The moral and legal responsibility of employers to ensure the safety of their employees is paramount. Effective management of health and safety at work includes:

- Developing comprehensive health and safety policies
- Conducting risk assessments
- Performing audits and inspections
- Implementing occupational health programs
- Preventing accidents
- Measuring health and safety performance
- Training and organizing health and safety protocols

### Safety Policies

Written safety policies are an essential tool for demonstrating an organization's commitment to employee protection. They serve as a declaration of intent, a framework for policy implementation, and a set of guidelines for ensuring safety across the workplace. The policy should include:

1. **General Policy Statement:** A broad commitment to safety, compliance with laws, and organizational objectives related to worker protection.
2. **Problem Statement:** While safety measures are legally protected, their implementation in practice often falls short. Awareness among construction workers, especially in the Indian region, remains insufficient. Improving awareness can lead to improved safety conditions.
3. **Scope of the Study:** This study is focused on the safety measures in government projects in Chennai, Tamil Nadu, particularly those executed by the Chennai Metro. It examines both large and small contractors and the varying levels of awareness and adherence to safety measures.

### Objectives

The main objectives of this study are:

1. To measure the awareness and satisfaction levels of contract workers regarding safety and welfare measures.

2. To explore whether there is any significant difference in satisfaction levels based on demographic factors such as age, education, and experience.

## LITERATURE REVIEW

Previous studies have highlighted the importance of health, safety, and welfare in improving employee relations and organizational effectiveness. For example:

**Gamage (2022)** emphasized that maintaining proper health and safety measures contributes to better employer-employee relations, ultimately benefiting the organization.

**Rajendran and Rajesh Kumar (2023)** explored labor welfare measures in Indian chemical industries, stressing the importance of safety, training, and adequate working conditions for employees.

These studies underline the need for comprehensive safety programs to ensure worker welfare and safety.

## RESEARCH METHODOLOGY

### Study Design

This descriptive study focuses on measuring the awareness and satisfaction levels regarding welfare provisions among workers in government construction projects, particularly Chennai Metro projects. The study involves the following methodology:

1. **Sampling:** Four large contractors were randomly selected, and 40 workers were chosen from each contractor, resulting in a total of 160 workers. However, only 130 workers were deemed fit for further analysis.

2. **Data Collection:** The data was collected through surveys measuring worker awareness and satisfaction regarding safety measures.

3. **Analysis Tools:**

Descriptive statistics (mean and standard deviation) were used to assess awareness and satisfaction levels.

Factor analysis was performed to reduce the variables and identify the key factors influencing satisfaction.

One-way ANOVA was used to test the impact of demographic factors on satisfaction levels.

t-tests were applied to assess differences between awareness and satisfaction levels across contractors.

## FINDINGS

### Awareness Levels

The study assessed awareness regarding key safety measures such as maximum working hours, mandatory safety equipment, insurance, first aid facilities, and suitable tools. The findings revealed that:

**Table-1: Awareness Level**

Awareness level	Maximum working hours	Safety equipment	Insurance	First aid facility	Suitable Tools
Not aware	16	11	19	20	12
Slightly aware	21	17	22	22	30
Moderately aware	23	43	26	30	26
Aware	48	46	40	47	37
Highly aware	22	13	23	11	25

**Source:** Primary data computed

- **Maximum Working Hours:** 48% of workers were aware.
- **Safety Equipment:** 46% of workers were aware.
- **Insurance:** 40% of workers were aware.
- **First Aid Facilities:** 47% of workers were aware.
- **Suitable Tools:** 37% of workers were aware.

### Satisfaction Levels

Workers were also asked to rate their satisfaction with the same safety measures. The results showed:

**Table-2: Satisfaction Level**

Awareness level	Maximum working hours	Safety equipment	Insurance	First aid facility	Suitable Tools
Highly Dissatisfied	13	16	13	8	10
Dissatisfied	21	10	15	20	15
NSNDS	31	25	28	53	37
Satisfied	52	67	57	38	49
Highly Satisfied	13	12	17	11	19

**Source:** Primary data computed

- **Maximum Working Hours:** 52% of workers were satisfied.
- **Safety Equipment:** 67% of workers were satisfied.
- **Insurance:** 57% of workers were satisfied.
- **First Aid Facilities:** 38% of workers were satisfied.
- **Suitable Tools:** 49% of workers were satisfied.

These findings suggest that satisfaction levels tend to be higher than awareness levels, particularly in areas like safety equipment and tools.

#### Impact of Demographic Factors

One-way ANOVA and t-tests revealed significant differences in safety awareness and satisfaction based on demographic factors, including age, education, and experience. Specifically:

**Table-3: Demographic Factors and Overall Awareness and Satisfaction**

Demographic Factors	F-Value/ t-value	P-Value
Age	-4.578	0.001
Education	-3.912	0.019
Experience	-3.022	0.025
Family in the same place	-2.998	0.029
Size of Contractors	-3.357	0.022

**Source:** Primary data computed

- Age was the most significant factor influencing both awareness and satisfaction levels.
- Workers with higher educational backgrounds and more experience reported higher satisfaction levels, though their awareness was still below the expected level.

#### SUGGESTIONS

Based on the findings, it is clear that while satisfaction levels are higher than awareness, both need improvement. The following suggestions are proposed:

1. **Educational Programs:** Targeted safety awareness programs are necessary to improve workers' knowledge of safety measures.
2. **Worker Engagement:** Engaging workers in safety discussions and training can enhance their awareness and satisfaction levels.
3. **Regular Safety Audits:** Frequent inspections and audits should be conducted to ensure that safety measures are effectively implemented.

#### IMPLICATIONS

This study emphasizes the importance of safety awareness in reducing accidents and improving worker welfare. Implementing effective safety programs not only enhances worker well-being but also contributes to cost-effectiveness by reducing the number of accidents and associated costs.

#### FUTURE RESEARCH SCOPE

Future research could explore the following areas:

- Perception of safety equipment and its proper usage by workers.
- A comparative study of awareness between local and migrant workers.
- Analysis of the effectiveness of safety training programs in improving awareness.

#### REFERENCES

1. Basu Durga Das (2013) Introduction to the Constitution of India, Prentice Hall of India Pvt. Ltd., New Delhi.
2. Batra SL (1996), Employment for Women: A Study of Export-Oriented Garment Industry, Har-Anand Publications, New Delhi.

3. Edwards S.T. (1953) Philosophies of Labour Welfare' in Indian Journal of Social Work, Department of Publications, Tata Institute of Social Sciences, Bombay, Volume XIV No.1 I.L.O (1950) Report on Asian Regional Labour Conference, Geneva.
4. Gamage, S. (2022). Workforce and Maintenance of Health, Safety, and Welfare. *International Journal of Safety Management*, 5.
5. <http://en.wikipedia.org>, <http://managementhelp.org>, Labour Welfare Measures of Chemical Companies in Tamilnadu – An Empirical Study, Radix International Journal of Research in Social Science, 1(6).
6. Kalpagam, U. (1991) Labour in the Small Industry: The case of the Export Garment Industry in Madras', Economic and Political Weekly, Vol. XVI, NO. 48., Sameeksha Trust Publication, Bombay.
7. Krishana Raj, (undated) Socio-economic conditions of women workers in the Garment Industry in Bombay, 'SNDT Women's University, (Mimeo) NEA (2001), Directory of NOIDA employers' Association, NOIDA.
8. Neetha, N. (2015) Gender and Technology: Impact of flexible Organisation and Production on Female Labour in the Tiruppur Knitwear Industry, V.V. Giri National Labour Institute, NOIDA. Government of India, Ministry of Labour & Employment (1969), Report of the Committee on Labour Welfare.
9. Poonam Salaria and Sumit Salaria (2013). Employee welfare measures in Auto sector, International Journal of Business and Management Invention, 2(3).
10. Rajendran, R., & Rajesh Kumar, S. (2023). Labor Welfare Measures in Chemical Industries. *Journal of Labor Welfare Research*, 1.
11. Rama satyanarayana and jayaprakash reddy, (2022) Labour welfare measures in cement industries in India a case of kcp limited, cement division, macherla, andhra pradesh, International Journal of Physical and Social Sciences, 2(7).
12. S. Samarthakani and Dr. R. Srinivasan (2013), Evaluating Labour Welfare Legislations and Statutory Measures Initiated by Perambalur Sugar Mills Lt, Global research Analysis, 2(2).
13. Sanjay Upadhyaya (2006) Awareness and Implementation of Labour Welfare Measures: A Case Study of Garment and Hosiery Industry of Noida, International Journal of Management Sciences , 2(1).
14. Singh, Manjit (2011) Garment industry: A Study of the Labour Process in Unorganised Industry, Monohar Publication, New Delhi.