

# Powerloom Workers in Nagari Mandal: An In-Depth Study of Challenges and Potential Solutions

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**Abstract**—The powerloom industry plays a pivotal role in India's textile sector, particularly in regions like Nagari Mandal of Andhra Pradesh, where it supports the livelihoods of thousands of workers. This study examines the socio-economic conditions and workplace challenges faced by powerloom workers in Nagari Mandal through a mixed-methods approach involving surveys, interviews, and statistical analysis. The findings reveal widespread issues such as low wages, long working hours, inadequate health and safety measures, limited education, and lack of social security. Correlation and regression analyses underscore the relationship between income, job satisfaction, education, and health outcomes. The study concludes with practical suggestions aimed at improving labor welfare and enhancing the sustainability of the powerloom sector. These insights are crucial for policymakers, labor rights advocates, and industry stakeholders seeking to implement equitable labor practices in India's informal textile economy.

**Index Terms**—Powerloom Workers, Socio-Economic Challenges, Working Conditions, Labor Welfare, Nagari Mandal

## I. INTRODUCTION

The powerloom industry in India is a critical component of the country's textile sector, contributing significantly to employment and economic development. Andhra Pradesh, one of India's leading states in textile production, houses a substantial number of powerloom units, particularly in districts known for their rich textile traditions. Among these, Nagari Mandal in the Chittoor district stands out as a vital hub for powerloom activity.

Nagari Mandal has a long history intertwined with the textile industry, where generations of families have been engaged in weaving and related activities. The region's strategic location, availability of raw materials, and skilled labor force have fostered the

growth of powerloom units. These units produce a variety of fabrics, contributing to both domestic markets and exports, thus playing a crucial role in the local and state economy.

However, despite its significance, the powerloom sector in Nagari Mandal faces numerous challenges that affect the well-being of its workers. These challenges include inadequate wages, long working hours, poor working conditions, health risks, and lack of social security benefits. The workers, often coming from socio-economically disadvantaged backgrounds, struggle to make ends meet and face health issues due to the strenuous nature of their work environment.

This study aims to delve into the socio-economic and working conditions of powerloom workers in Nagari Mandal. By understanding the challenges, they face and identifying potential solutions, the research seeks to provide actionable insights that can help improve their living and working conditions. This, in turn, would not only benefit the workers but also enhance the productivity and sustainability of the powerloom sector in Nagari Mandal.

The objectives of this study are:

1. To identify and analyze the socio-economic challenges faced by powerloom workers in Nagari Mandal.
2. To assess the working conditions and health issues prevalent among these workers.
3. To propose solutions and policy recommendations that can improve their working conditions and livelihoods.

By addressing these objectives, the study aims to contribute to the broader discourse on labor welfare in the textile industry, offering specific insights into the conditions in Nagari Mandal. The findings and recommendations of this research are intended to inform policymakers, industry stakeholders, and labor organizations in their efforts to foster a more

equitable and sustainable powerloom sector in Andhra Pradesh.

## II. LITERATURE REVIEW

The literature on the conditions of powerloom workers in India, specifically in regions like Nagari Mandal, highlights significant challenges and opportunities. Ahmad (2020) explores the harsh labor conditions prevalent across India's textile industry, noting low wages, long hours, and inadequate social security. Gupta and Sharma (2019) discuss the socio-economic issues faced by textile workers in rural areas, emphasizing the need for improved labor policies. The Government of India's (2022) annual report provides critical statistical data on the textile sector, including trends in powerloom production. Rao (2018) addresses health and safety concerns in textile factories, focusing on occupational hazards faced by workers. Nair (2017) examines the impact of globalization on India's textile industry, which has influenced labor practices and market dynamics. Singh and Kumar (2021) analyze employment practices in the informal sector, highlighting job insecurity and low wages. Das and Mishra (2019) explore the gender dimensions of informal employment, noting significant disparities faced by female workers. Venkatesh and Ramaswamy (2020) assess the economic impact of the powerloom industry in South India, providing insights into employment and income distribution. Reddy and Prasad (2018) review occupational health hazards in textile industries, while Krishna and Raju (2021) discuss the challenges and opportunities in India's textile sector, emphasizing the need for sustainable development strategies. This body of literature collectively underscores the urgent need for policy interventions to improve the socio-economic and health conditions of powerloom workers in Nagari Mandal.

**Gaps Identified:** While these studies provide valuable insights, specific research focusing on the powerloom workers in Nagari Mandal is limited. This study fills this gap by providing a detailed analysis of the challenges and potential solutions specific to this region.

## III. METHODOLOGY

The study on powerloom workers in Nagari Mandal will employ a mixed-methods approach. Qualitative methods such as interviews and focus groups will capture detailed insights into workers' experiences and challenges. Quantitative surveys will gather data on income, working conditions, health impacts, and social security access. Statistical tools like descriptive analysis and hypothesis testing will be used to analyze quantitative data. A review of existing literature will provide context and support findings. This integrated approach aims to comprehensively understand and address issues affecting powerloom workers, informing policy recommendations for their improved well-being.

### Hypotheses:

- H1: Powerloom workers in Nagari Mandal face significant socio-economic challenges.
- H2: Improved labor policies and worker support systems can enhance their working conditions and livelihoods.

### Data Collection:

Data collection for the study on powerloom workers in Nagari Mandal will involve both qualitative and quantitative methods. Qualitatively, in-depth interviews and focus group discussions will capture detailed insights into workers' daily challenges and aspirations. Quantitatively, surveys will gather data on income levels, working conditions, health impacts, and access to social security. These methods will provide a comprehensive understanding of the socio-economic dynamics affecting powerloom workers in the region, supporting evidence-based recommendations for their welfare and development.

- **Surveys:** Structured questionnaires were administered to 200 powerloom workers.
- **Interviews:** In-depth interviews were conducted with 30 workers, 10 employers, and 5 local labor officials.

**Secondary Data:** Analysis of existing reports and data from local government and industry associations.

**Data Analysis:** Quantitative data from surveys were analyzed using descriptive statistics, correlation analysis, regression analysis, and hypothesis testing. Qualitative data from interviews were thematically analyzed.

Demographics

Category	Data
Age Distribution	60% of workers are between 25-45 years old.
Gender Distribution	70% male, 30% female.

Socio-Economic Conditions

Category	Data
Income	Average monthly income is RS. 6,000.
Education	65% have not completed secondary education.
Living Conditions	55% live in rented accommodations with inadequate facilities.

Challenges Identified

Category	Data
Low Wages	78% of workers reported dissatisfaction with their wages.
Long Working Hours	65% work more than 10 hours a day.
Health Issues	48% reported chronic health problems due to poor working conditions.
Lack of Social Security	72% do not have access to health insurance or pension schemes.

These tables categorically present the demographic characteristics, socio-economic conditions, and challenges identified among powerloom workers in Nagari Mandal based on the study's data analysis.

Data Tables

Table 1: Demographic Profile of Powerloom Workers

Parameter	Percentage
Age 25-45	60%
Male Workers	70%
Female Workers	30%

Table 2: Socio-Economic Conditions

Parameter	Value
Average Monthly Income	RS. 6,000
Workers Without Secondary Education	65%
Workers in Rented Accommodations	55%

Table 3: Key Challenges Faced by Workers

Challenge	Percentage
Dissatisfaction with Wages	78%
Working More than 10 Hours a Day	65%
Reporting Chronic Health Problems	48%
Lack of Access to Social Security	72%

Statistical Tools Analysis

The statistical tools analysis for this study involves descriptive statistics to summarize key metrics, correlation analysis to explore relationships between variables like income and job satisfaction, and regression analysis to model predictors of job satisfaction and income. These analyses provide a detailed understanding of the socio-economic and health factors impacting powerloom workers in Nagari Mandal.

Descriptive Statistics

Statistical Measure	Data
Mean income	Rs. 6,000
Standard deviation of income	RS. 1,200
Percentage of workers with health issues	48%

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Correlation Analysis

Correlation Pair	Correlation Coefficient	Interpretation
Income vs. Job Satisfaction	$r = 0.65$	Strong positive correlation
Working Hours vs. Health Issues	$r = 0.55$	Moderate positive correlation

Regression Analysis

Model 1: Income as a Predictor of Job Satisfaction

Regression Model	Equation	R <sup>2</sup> Value
Income as Predictor of Job Satisfaction	Job Satisfaction = 1.5 + 0.4 × Income	R <sup>2</sup> = 0.42

Model 2: Education as a Predictor of Income

Regression Model	Equation	R <sup>2</sup> Value
Education as Predictor of Income	Income = 3000 + 500 × Education Level	R <sup>2</sup> = 0.35

#### IV. FINDINGS

Based on the data collected through structured surveys, in-depth interviews, and analysis of secondary sources, the study offers a comprehensive understanding of the demographic profile, socio-economic conditions, and workplace challenges faced by powerloom workers in Nagari Mandal. The statistical analysis further supports the qualitative insights, revealing key patterns and problem areas that impact the livelihood and well-being of the workforce. The following are the major findings derived from the research:

1. Demographic Characteristics:
  - 60% of workers are aged between 25–45 years, indicating a predominantly working-age population.
  - Gender distribution shows male dominance with 70% men and 30% women involved in powerloom work.
2. Socio-Economic Conditions:
  - The average monthly income is only Rs. 6,000, reflecting low wage levels.
  - 65% of workers have not completed secondary education, limiting upward mobility.
  - 55% live in rented accommodations with substandard living conditions.
3. Working Conditions and Challenges:
  - 78% of workers expressed dissatisfaction with their wages.
  - 65% of workers work for more than 10 hours a day, indicating excessive labor hours.

- 48% reported chronic health problems, primarily due to poor ventilation, dust, noise, and lack of safety measures.
  - 72% of workers lack access to any form of social security such as health insurance or pension schemes.
4. Statistical Insights:
    - A strong positive correlation ( $r = 0.65$ ) exists between income and job satisfaction.
    - A moderate positive correlation ( $r = 0.55$ ) is observed between long working hours and health issues.
    - Regression models indicate that both income and education significantly influence job satisfaction and income levels ( $R^2$  values of 0.42 and 0.35 respectively).

#### V. SUGGESTIONS

The findings clearly highlight the urgent need for targeted interventions to uplift the conditions of powerloom workers. To address the multi-dimensional challenges faced by this vulnerable workforce, a combination of policy support, grassroots-level reforms, and industry-driven initiatives is essential. Based on the insights gathered from the study, the following suggestions are proposed to improve the socio-economic status and overall quality of life of powerloom workers in Nagari Mandal:

1. Minimum Wage Enforcement and Revision:
  - Implement and monitor region-specific minimum wage policies that reflect living costs and inflation.
2. Skill Development and Education:
  - Launch vocational training programs focusing on textile machinery operation, quality control, and safety.
  - Provide adult education programs to improve literacy and financial literacy.
3. Health and Safety Measures:
  - Mandate health check-ups, protective gear, and hygienic work environments.
  - Conduct occupational safety training sessions regularly.
4. Social Security Inclusion:
  - Extend ESI (Employees’ State Insurance), Provident Fund, and pension schemes to informal sector workers.

- Create a registration mechanism for all powerloom workers under a unified labor portal.
  - 5. Working Hours Regulation:
    - Introduce monitoring mechanisms to restrict daily working hours to 8–9 hours with weekly offs.
  - 6. Promotion of Worker Cooperatives:
    - Encourage the formation of self-help groups and cooperatives among powerloom workers for better bargaining power, financial inclusion, and collective welfare.
  - 7. Policy Intervention and Awareness:
    - Organize awareness drives on government welfare schemes such as PM-SYM (Pradhan Mantri Shram Yogi Maandhan Yojana), Ayushman Bharat, and Mudra Yojana.
    - Set up a local labor welfare committee for grievance redressal and support services.
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## VI. CONCLUSION

The study reveals that powerloom workers in Nagari Mandal are trapped in a cycle of low income, poor education, harsh working conditions, and inadequate social protection. Although they play a vital role in the regional textile economy, their living and working standards are alarmingly below acceptable norms. The statistical evidence strongly supports the need for policy-level reforms and grassroots-level interventions to uplift these workers. Improving their socio-economic status will not only enhance their well-being but also strengthen the productivity and sustainability of the powerloom sector in Andhra Pradesh.

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