

Demographic Analysis of Brick Kiln Workers: A Case Study of Sirsa District, Haryana

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Abstract

Bricks have been a main material in the construction sector since the dawn of civilization. India has over 150,000 brick manufacturing industries, providing direct employment to 20 billion people each year. The demographic characteristics of workers in this industry are unique. The primary objective of the current study is to analyze the demographics of workers in the brick industry. A descriptive research design and mixed methods approach were used. In this research primary data were used, which was collected using questionnaires. Multi-stage random sampling was used to select 140 workers from various categories. The study revealed that 84 percent of men and 95 percent of women in the brick industry are married. 75 percent of workers in the brick industry are between the ages of 18 and 40 years. Their literacy rate is only 48.57 percent. 57.86% of workers in this industry belong to the SC category. 65% of workers in this industry are migrants. Research results indicate a significant difference in literacy and income between men and women working in the brick industry. The Chi Square Test was used to analyze the data. It was analyzed using SPSS version 20. To improve the socioeconomic status of workers in this industry, a committee headed by the District Magistrate needs to be formed to periodically review the implementation of the provisions of laws made for their welfare, which can help improve the social and economic status of workers working in this sector.

Keywords: Demographic, Brick Kiln Workers, Socioeconomic.

1. Introduction

Currently, all countries are experiencing rapid development. Along with this development, various types of construction are also rapidly promoting. While many types of materials are used in construction, even after centuries since the beginning of civilization, bricks remain the primary building material. Asia produces 86.67% of the world's total brick production, amounting to 1300 billion bricks annually (Anwar et al., 2023). India ranks second after China in brick production in Asia and the world (Khan & Vyas, 2008, Dalla et al., 2025). Even within India, there is considerable disparity in the distribution of brick industries. Two-thirds of total brick production is produced in the Ganges-Brahmaputra plains (Gupta, 2018). India has a total of 1.5 lakh brick industries (Dalla et al., 2025). These industries provide employment to 20 billion people each year, producing 200 to 250 billion bricks annually (Gupta, 2018). Even after centuries, the brick industry in India remains a traditional industry. This industry is technologically backward, making it a low-capital industry. The brick industry uses entirely labor-intensive technology. It is a small-scale industry in the unorganized sector (Kumar & Meena, 2018). The brick industry provides employment and livelihood to millions of unskilled workers. Being classified as

an unorganized industry, workers in this industry face numerous forms of exploitation. Violations of labor laws and various other welfare schemes and provisions are prevalent in the brick industry. This has a negative impact on the social and economic well-being of workers in this industry. Brick industries are often found clustered in rural areas and on the outskirts of cities. Brick industries thrive in locations with sufficient water, suitable quality soil, and a market for the finished bricks (Khan & Vyas, 2008). The brick industry is seasonal in nature. Brick production begins after the monsoon season, in October-November, and continues until June-July, before the onset of the following monsoon season. Consequently, most workers in this industry only have access to work for six to eight months a year. Due to the seasonal nature of the brick industry, it does not provide permanent employment. Agriculture in India is also a seasonal occupation and does not provide employment year-round. This is why most workers in this industry come to work during the agricultural off-season as a strategy to find employment. Most of these workers are migrant workers. Inter-state migration is most prevalent in the brick industry, and these workers migrate with their families. These include women, men, children, and the elderly. This permanent migration has the greatest impact on the education of the children of workers employed in these industries. Often, these children work alongside their parents in the brick industry, and when their parents return to their native places during the off-season, they join school at that time. The brick industry offers considerable opportunities for division of labor and is well-practiced. There are several categories of workers in the brick industry. At the top level is the brick factory owner. Following this are various categories of workers such as Jamadar/Contractor, Manager/Munshi, Security Guard/Chowkidar, Molder/Pather, Loader/Bharaiwala, Fireman/Jalaiwala, Driver, Unloader/Nikaasiwala, Stacker/Beldar, and Keriwala. Families often work as a unit, engaged in molding and unloading.

1.1 Demographic Analysis

Demographic analysis is a specialized type of analysis that analyzes a specific population group based on specific social and economic variables. These variables include age, gender, caste, religion, marital status, family status, education, residence, migration, income, employment, etc. Workers in the brick industry have unique demographic characteristics that impact their social and economic status.

1.2 Statement of the Research Problem

Sirsa district has a significant number of brick industries and their workforce. However, workers in this industry face a variety of problems, such as work pressure, low wages, and a lack of basic amenities etc. The current study will help identify the demographic characteristics of workers in Sirsa district's brick industries and identify the problems and challenges they face, and then suggest solutions for improving them.

2. Review of Literature

The brick industry has some unique characteristics compared to other industries. Consequently, the demographic characteristics of workers in this industry are also different from those in other industries. Numerous studies have been conducted on workers in the brick industry, and analyzing these studies can be very helpful in the current study. The brick industry is a labor-intensive industry. Despite brick being a labor-intensive industry, the majority of female workers are molders (Singh, 2005). Workers in the brick industry are required to work extremely hard, sometimes exceeding 12 to 16 hours per day (Sharma et al., 2013; Rahman et al., 2012; Isabelle et al., 2007). This hard work contributes to a higher proportion of young workers in this industry. In his research on the brick industry in Tamil Nadu, A.

Dharmalingam (1995) found that the largest number of workers in the industry are in the age group of 21 to 30. There is significant wage inequality in the brick industry based on job category (Gupta, 2003). Wages are often significantly lower than the amount of work they perform, leaving workers trapped in debt (Santha & Athena, 2013). Most workers in the brick industry are migrant workers with low levels of education (Kainth, 2009; Muhammad et al., 2010; Kazi & Bote, 2019). Due to illiteracy, they are unaware of their rights and labor laws, making them vulnerable to exploitation. The majority of workers in the brick industry belong to the Scheduled Castes and Backward Classes (Khan & More, 2015; Kumari, 2018). Most workers in the brick industry are married, and many are victims of child marriage (Akhtar et al., 2019). Migrant workers come to work in the brick industry with their families and often live as nuclear families. These workers reside in kutchha and semi-kutchha housing built around the brick industry worksite, provided by the brick factory owner at no cost. However, a lack of basic amenities in these housing facilities is common (Anwar et al., 2023). Rani et al. (2018) studied bonded labor among brick industry workers in Sirsa district and found that the prevalence of the advance system creates bonded labor, negatively impacting their social and economic status.

Based on the literature review, it can be concluded that numerous studies have been conducted on the conditions of workers in the brick industry. However, a demographic analysis of brick industry workers in Haryana, and specifically in Sirsa district, has been lacking. Therefore, it is logical and useful to research on this topic.

2.1 Hypothesis

1. H0: There is no significant difference in education between male and female workers.
2. H0: There is no significant difference in income between male and female workers.

2.2 Specific Objectives of the Study

1. To study the demographic characteristics of workers employed in the brick industry.
2. To determine the educational disparity between male and female workers in the brick industry.
3. To determine the income disparity between male and female workers in the brick industry.

3. Research Methodology

3.1 Research Design: Descriptive research design was used in this research.

3.2 Research Method: Mixed method has been used in this research.

3.3 Data and Data Collection Technique: This study primarily utilized primary data to achieve its objectives. The questionnaire method was used to collect the desired information from the selected respondents. Secondary data was also used as needed. The main sources of this data include the internet, published reports from various institutions, and published previous research.

3.4 Sample and Sampling: This research used a multistage random sampling method. The sample size was 140. This included 100 male and 40 female respondents, who were selected at random.

I Stage (District)	II Stage (Total Block)	III Stage (Selected Block)	IV Stage (Sample)
Sirsa District	<ol style="list-style-type: none"> 1. Sirsa 2. Odhan 3. Dabawali 4. Nathusari Chopta 5. Baragudha 6. Ellenabad 	Sirsa Block	Sample= 140 Male= 100 Female=40

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3.5 Data Analysis Techniques: This research utilized primarily primary data to achieve its stated objectives. The research data are presented in tables and percentages. SPSS version 20 was used to analyze the data and examine the relationships among various variables.

4. Data Analysis and Results

This research conducted a sample of 140 brick workers in the Sirsa block of Sirsa district to analyze the demographics of brick workers. The sample included 100 (71.43%) male workers and 40 (28.57%) female workers.

4.1. Age Profile of the Respondent

The work done in the brick industry requires a lot of hard work. This requires energetic and young workers. This is why this industry has the largest number of young workers. Table 1 shows that 75 percent of workers in the brick industry are between 18 and 40 years of age. After this, the number of workers increases with age. Only 2.14 percent of male workers in this industry were found to be over 60 years of age, and no female workers were found in this age group.

Table 1: Age Profile of the Respondent (N-140)

Age	Male (Percentage)	Female (Percentage)	Total (Percentage)
18-20	06 (06)	03 (7.5)	09 (6.42)
21-30	36 (36)	19 (47.5)	55 (39.29)
31-40	34 (34)	7 (17.5)	41 (29.29)
41-50	14 (14)	4 (01)	18 (12.86)
51-60	7 (07)	7 (17.5)	14 (10)
60>	3 (03)	00 (00)	3 (2.14)
Total	100 (100)	40 (100)	140 (100)

(Source: Researcher’s Calculation based on primary data collected during survey, 2025)

4.2 Marital Status of the Respondent

Table 2 shows the marital status of brick industry workers. According to this, 84 percent of men and 95 percent of women are married. No men were found in the Widower/Widow/Divorced category, while 0.71 percent was found in this category of women. Overall, 87.14 percent of workers are married.

Table 2: Marital Status of the Respondent (N-140)

Marital Status	Male (Percentage)	Female(Percentage)	Total(Percentage)
Unmarried	16 (16)	01 (2.5)	17 (12.15)
Married	84 (84)	38 (95)	122 (87.14)
Widower/Widow/ Divorced	00 (00)	01 (2.5)	01 (0.71)
Total	100 (100)	40 (100)	140 (100)

(Source: Researcher’s Calculation based on primary data collected during survey, 2025)

4.3 Family Profile of the Respondent

Table 3 shows the family status of workers in the brick industry. According to this data, most workers in

this industry live in nuclear families. 23.57 percent of workers in this industry live in joint families.

Table 3: Types of Family of the Respondent (N-140)

Type of Family	Number of Respondent (Percentage)
Nuclear	107 (76.43)
Joint	33 (23.57)
Total	140 (100)

(Source: Researcher’s Calculation based on primary data collected during survey, 2025)

4.4. Education Profile of the Respondent

Table 4 shows the educational status of workers in the brick industry. According to this table, the educational status of workers employed in this industry is quite poor. The literacy rate of these workers is 48.57 percent, which is quite low. Here, 43 percent of men and 72.5 percent of women workers are illiterate. The Chi Square value related to literacy among male and female workers is 9.954 and the p value is 0.002. Since this value is less than 0.05, the null hypothesis related to it is rejected. This indicates that there is a significant disparity in the literacy rate between men and women.

Table 4: Education Profile of the Respondent (N-140)

Educational Status	Male (Percentage)	Female (Percentage)	Total (Percentage)
Illiterate	43 (43)	29 (72.5)	72 (51.43)
Literate	57 (57)	11 (27.5)	68 (48.57)
Total	100 (100)	40 (100)	140 (100)
Chi Squire Value	9.954	Null Hypothesis rejected as P value <0.05	
df	1		
P Value	.002		

(Source: Researcher’s Calculation based on primary data collected during survey, 2025)

4.5 Caste/Category Profile of the Respondent

The brick industry employs workers from all categories, but the majority are from backward classes. Table 5 shows that the highest number of workers in the brick industry (57.86%) are from the SC category, followed by 35% from the BC/OBC category. The minority category has the lowest number of workers, with only 5% from the general category.

Table 5: Caste/Category Profile of the Respondent (N-140)

Caste/Category	Total (Percentage)
SC	81 (57.86)
ST	02 (1.43)
BC/OBC	49 (35)
General	07 (05)
Minority	01 (0.71)
Total	140 (100)

(Source: Researcher’s Calculation based on primary data collected during survey, 2025)

4.6 Religious Profile of the Respondent

India is a multi-religious country, but Hindus and Muslims predominate. A similar trend is observed in the brick industry. According to Table 6, 99.29 percent of workers in the brick industry are Hindus, while only 0.71 percent are Muslims. No people of any other religion were found employed in this industry.

Table 6: Religious Profile of the Respondent (N-140)

Caste/Category	Number of Respondent (Percentage)
Hindu	139 (99.29)
Muslim	01 (0.71)
Other	00 (00)
Total	140 (100)

(Source: Researcher’s Calculation based on primary data collected during survey, 2025)

4.7 Migration Profile of the Respondent

Most of the workers in the brick industry are migrant workers. Some come to this industry from the same state, while others come from other nearby states. Table 7 shows the migration status of workers in the brick industry. 35 percent of the workers in this industry are from Haryana, and the remaining 65 percent are from other states. Among the outside states, the highest numbers of workers (46.42%) are from Uttar Pradesh. This is followed by 8.57 percent workers from Rajasthan. Workers from Bihar, Punjab, and other states also come to work in the brick industry, but the percentage is lower than that of other states.

Table 7: Migration Profile of the Respondent (N-140)

Native State	Number of Respondent (Percentage)
Haryana	49 (35)
Bihar	04 (2.86)
Rajasthan	12 (8.57)
Utter Pradesh	65 (46.42)
Punjab	04 (2.86)
Other	06 (4.29)
Total	140 (100)

(Source: Researcher’s Calculation based on primary data collected during survey, 2025)

4.8 Income Profile of the Respondent

Table 8 shows the monthly income of brick industry workers. According to this, the majority of workers in the brick industry earn between ₹5,000 and ₹15,000 per month. 2.86 percent of workers in this industry earn less than ₹5,000 per month. The percentage of workers earning between ₹5,000 and ₹10,000 is 29.29, while the percentage of women in this category is 50. The percentage of workers earning between ₹10,000 and ₹15,000 is 55, with 45% of women workers. Only 18 percent of male workers earn between ₹15,000 and ₹20,000 per month, and no female workers are in this category. There is a significant difference in the income of male and female workers in the brick industry, with a

Chi-square value of 17.323 and a P value of 0.001, which is less than 0.05. Thus, the null hypothesis regarding the difference in income between male and female workers is rejected.

Table 8: Income Profile of the Respondent (N-140)

Monthly Income	Male (Percentage)	Female (Percentage)	Total (Percentage)
0-5000	02 (02)	02 (05)	04 (2.86)
5001-10000	21 (21)	20 (50)	41 (29.29)
10001-15000	59 (59)	18 (45)	77 (55)
15001-20000	18 (18)	00 (00)	18 (12.86)
Total	100 (100)	40 (100)	140 (100)
Chi Squire Value	17.323	Null Hypothesis rejected as P value<0.05	
df	3		
P Value	.001		

(Source: Researcher’s Calculation based on primary data collected during survey, 2025)

5. Conclusion

The brick industry utilizes a large amount of labor in a variety of activities. Each activity requires hard work. This is why 75 percent of workers in the brick industry in Sirsa district are between the ages of 18 and 40. After this, the number of workers begins to decline as age increases. Most workers in the brick industry work with their families. 95 percent of women are married. Nuclear-family relationships are prevalent among workers employed in the brick industry, with 76.43 percent living in nuclear families. The literacy rate among workers in the brick industry is very low. Along with this low literacy rate, there is also a disparity between the literacy rates of men and women. This indicates that the literacy situation among women is even more dire. The majority of workers in the brick industry are migrant workers. Families often come to work in the brick industry from socially and economically disadvantaged families. More than 90 percent of workers in this industry belong to the SC/BC/OBC category. Only 5 percent of workers from the general category are entering this industry. This is because the socioeconomic status of those in the general category is better than that of those in the SC/BC/OBC categories, and they seek employment in other sectors rather than in this industry. Current research shows that 99.29 percent of workers in this industry are Hindus, and the rest are Muslim. Most workers in the brick industry are migrants. 35 percent of workers in this industry have migrated from the state where the industry is located. These workers perform jobs as clerks, pathers, drivers, drainers, and loaders. However, the largest number of workers come from Uttar Pradesh, accounting for 46.42 percent of the total workforce. Migrant workers from Bihar, Punjab, and Rajasthan also work in this industry. Despite their hard work in the brick industry, workers' income levels have been found to be low. In this industry, 55% of workers earn between ₹10,000 and ₹15,000 per month. Only 18% earn more than ₹15,000 per month, and no women are included in this category. This income is further reduced when one considers that most workers in this industry only get work for 6 to 8 months. There is a significant disparity in the incomes of male and female workers in this industry. In conclusion, it can be said that the number of male workers in the brick industry is higher than that of female workers. The status of workers employed in this industry is quite backward, and among these backward workers, women are even more backward.

6. Recommendations

Based on the findings of current research, the following measures need to be adopted to improve the conditions of workers in this industry:

1. To improve the level of education in the brick industry, children of workers employed in this industry should be enrolled in private schools under the RTE Act and transportation should be provided to them.
2. To monitor the implementation of laws designed for the welfare of workers in the brick industry, a committee should be formed under the supervision of the Deputy Commissioner and should periodically inspect the brick industry.
3. Migration allowances should be provided for migrant workers.
4. Awareness campaigns should be conducted through NGOs to raise awareness among brick industry workers.

Limitations: This research has drawn conclusions based on 140 samples. Therefore, it would not be appropriate to generalize these findings. Under similar circumstances to the current research area, the findings could be applied to other areas, but if the circumstances are different, it would not be appropriate to apply these findings to other areas.

Research Contribution: The chapters on Introduction and Review of Literature were written by the main author. The chapters on Methodology, Data and Data Analysis, Conclusion, and Recommendation were written by the main and co-authors.

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