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## A COMPREHENSIVE STUDY ON WORKING CONDITIONS AND HEALTH HAZARDS OF BRICK KILN WORKERS IN COIMBATORE DISTRICT, TAMIL NADU

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### Abstract

*The brick manufacturing sector is belongs tounorganised industries and it is a highly depend on labour power. Brick is an essential building material for a developing country, particularly India. Millions of people are employed in the industry. Many migrant labourers, including men and women, as well as children, are employed by the brick industry and work in the kiln on a temporary basis for minimal pay. It is well known that brick kiln employees have poor health and limited access to medical treatment. They are impoverished, exploited also deprived, and do not have status at their work place. They were frequently express dissatisfaction towards their working environments. The study focused on working conditions and problems of workers engaged in Brick manufacturing units. Furthermore, workers do not received proper treatment due to the unaffordability and distance to healthcare facilities.*

**Keywords:** *Brick Klin Workers, Health Hazards, Working Conditions*

### INTRODUCTION

The Indian brick manufacturing industry is a centuries-old unorganised sector that employs a large number of migrant women workers (Bijetri and Sen 2014). Women have become an essential part of the manpower resources in these unorganised sectors, but the female workers here suffer in silence. Employees in the brick business are a group that come from low-income backgrounds. As the ladies are living in temporary housing due to the concerns with the brick workers, there are no amenities for them to keep secure and safe. The poorest and most vulnerable people in rural life are brick kiln workers. (Rajanna 2020). Although some mechanisation was introduced in developed countries, conditions in India have not improved and human drudgery still prevails (Bijetri and sen 2014). According to studies from developing countries such as India, these workers suffer from a variety of health problems as a result of handling heavy loads without adequate rest breaks. Based on several studies, it has been found that women tend to experience a higher incidence of musculoskeletal disorders (MSDs) related to work compared to men. These types of MSDs, which often result in pain and reduced physical function, can cause significant discomfort and disability. (Bijetri and Sen 2014).

### REVIEW OF LITERATURE

According to Pawar (2022), India is the world's second-largest brick manufacturer after China. According to estimates, India

produces about 14,000 crores of bricks annually, mostly using antiquated manual conventional procedures. The study on brick kiln employees was carried out in the Maharashtra district of Ahmednagar, and it was found that workers frequently struggle with malnutrition, addiction, and a lack of education due to their poor wage levels. The overall situation of brick kiln employees may be improved through the provision of technical help, the enhancement of infrastructural facilities, and an increase in income levels.

Rajanna (2020) identified It is well knowledge that brick workers have poor health and limited access to healthcare. Bricklayers typically have morbidities as a result of their indecent jobs and unsanitary living conditions. The study also examined the nature of the task, the working environment, health risks, and a number of brick workers' issues. In 2015, Thirupathi and Anthonisamy examined the health issues brick kiln employees encountered. For the study, convenience sampling was employed. The data were analysed using statistical methods such the T-test, One Way ANOVA, and Factor Analysis. The study's key conclusion was that there is no discernible relationship between the demographic characteristics and health problems. The Salem District brick kiln employees are additionally impacted by age, gender, educational attainment, occupation, and income.

### STATEMENT OF THE RESEARCH PROBLEM

The working conditions and issues faced by brick kiln employees are examined in this research. Many studies have been conducted on socioeconomic situations, child labour in brick kiln industries, and brick industry environmental contamination. Yet, little study has been done on the circumstances at work and the issues of brick kiln employees in the Coimbatore District confront. In this sense, the current work fills a research gap and becomes more significant.

### OBJECTIVES OF THE STUDY

The main objectives of this study are:

- To evaluate working condition of Coimbatore district brick kiln workers.
- To identify the issues faced by the Coimbatore district brick kiln workers.

### RESEARCH METHODOLOGY

Coimbatore district is selected for the study area, since more than 50,000 workers are employed in brick kiln manufacturing industries from various districts. Out of 33 town **Panchayats** in Coimbatore District, 16 town **Panchayats** was selected for the study. With the help of Convenience Sampling method the study collected the 150 samples through well-structured interview schedule. The analysis was done by using statistical tools such as Logistic regression Model, Garrett Ranking Technique and Percentage.

### RESULTS AND DISCUSSION

#### Socio-Demographic Conditions of Workers in Brick Industry

To analyse the socio-demographic conditions of workers in brick industry different parameters are considered for the study. The parameters like Age, Gender, Marital status, Educational Qualification and Monthly income of the respondents.

**Table 1: Socio-Demographic Conditions of Workers in Brick Industry**

Variables	Particulars	Frequency	Percentage
Age	20 years to 30 years	26	17
	31 years to 40 years	33	22
	41 years to 50 years	59	39
	Above 50 years	32	21
	<b>Total</b>	<b>150</b>	<b>100</b>
Gender	Male	89	59
	Female	61	41
	<b>Total</b>	<b>150</b>	<b>100</b>
Marital Status	Married	99	66
	Unmarried	26	17
	Widow	25	17
	<b>Total</b>	<b>150</b>	<b>100</b>
Educational Qualification	Illiterate	103	69
	Primary	22	15
	Secondary	16	11
	Higher Secondary	9	6
	<b>Total</b>	<b>150</b>	<b>100</b>
Monthly Income	Less than Rs. 10,000	75	50
	Rs. 10,000 to Rs.15,000	45	30
	Rs. 15,001 to Rs.20,000	20	13
	Above Rs.20,000	10	7
	<b>Total</b>	<b>150</b>	<b>100</b>

The study found that majority (39%) of the brick kiln workers belonged to 40-50 years of age group. Out of 150 respondents 89 (59%) were performed on males and 61 (41%) were performed on females. It was evident from the study, majority (66%) of the respondents were married. While analysing education qualification, highest (69%) percentage of them were illiterate, limited respondents only attained higher secondary level. With regards to monthly income of the respondents, about 50 per cent of them were getting less than 10,000 rupees and only 7 per cent of them were getting above 20,000 rupees.

### Working Conditions of Brick Kiln Workers

The manufacture of bricks is a part of the building sector, which is classed as risky and hazardous by the International Labour Organization (ILO). In India, the unorganised brick kiln sector employs at least 10 million people in unhygienic circumstances. Workers at brick kilns usually face a lack of social protection, basic health and welfare services, and unpleasant and hazardous working circumstances (Bajracharya et al 2022).

**Table 2: Working Conditions of Brick Kiln Workers**

Variables	Particulars	Frequency	Percentage
<b>Type of Work</b>	Mud Cutter	18	12
	Brick Maker	25	17
	Fire man	12	8
	Mud and Brick Carrier	22	15
	Moulding Bricks	23	15
	Arranging Bricks to Dry	35	23
	Loading Bricks	15	10
	<b>Total</b>	<b>150</b>	<b>100</b>
<b>Working Hours</b>	7-8 Hours	88	59
	9-10 Hours	50	33
	Above 10 Hours	12	8
	<b>Total</b>	<b>150</b>	<b>100</b>
<b>Working Experience</b>	Below 1 year	16	11
	1-3 years	24	16
	4-6 years	52	35
	7-9 years	44	29
	Above 9 years	14	9
	<b>Total</b>	<b>150</b>	<b>100</b>
<b>Satisfaction level towards working conditions</b>	Yes	23	15
	No	127	85
	<b>Total</b>	<b>150</b>	<b>100</b>

The study revealed that, out of 150 respondents, highest (23%) per cent of the respondents engaged as arranging bricks for drying. About 17 per cent of them work as a brick makers, followed by 15 per cent of them were work as a Mud & Brick carrier and Moulding Bricks respectively. 12 percent of the respondents work as mud cutter, likewise 10 per cent of them work of loading bricks, remaining 8 per cent of the respondents

work as fire man. The study also analyses that number of hours spent on work in the brick industry. Majority (59%) of the respondents spent 7-8 hours per day. Highest (35%) percentage of the respondents having 3-6 years of work experience in the field of brick industry. With respect to working conditions majority (85%) of the respondents dissatisfaction towards their working environments and least (15%) per cent of them only

expressed their satisfaction.

### Logistic Regression Model

Logistic Regression model has been adopted to analyse the factors influencing the satisfaction level of working conditions of Brick Kiln workers. It is a suitable technique for analysing dichotomous nature of working conditions. i.e. Satisfied with the working condition and Not satisfied with the working condition. In this study, the dependent variable is whether the Brick kiln workers are satisfied with the working condition can

be given a value (1) and the Brick Kiln workers those who are not satisfied with the working condition can be give a value (0). The selected independent variables are (i) Organisational structure, (ii) communication and Leadership, (iii) Rewards and recognition, (iv) workload and Timing, (v) Employee growth & Development, (vi) Employee family financial support, (vii) Social security measures, (viii) safety measures at workplace. Using the above mentioned eight independent variables, the Logistic Regression model is used in this study. It is specified as follows.

**Table 3: Results of Logistic Regression Model**

				Wald	d.f	Sig.	Exp(B)
Step 1 <sup>a</sup>	Organisational structure*	5.463	4.746	1.009	1	0.002	81.115
	communication and Leadership*	3.261	2.746	1.099	1	0.001	78.239
	Rewards and recognition	-0.234	0.991	0.022	1	0.776	0.999
	Workload and Timing	-0.147	0.021	0.671	1	0.555	0.997
	Employee growth & Development	-0.456	0.756	0.394	1	0.601	0.699
	Employee family financial support*	2.134	2.729	1.001	1	0.005	66.111
	Social security measures	3.261	2.988	1.007	1	0.006	79.226
	safety measures*	4.300	3.700	1.000	1	0.008	55.199

Computed from Primary Data

Note: \* found significant with the dependent

At a 5 percent level of significance, the organizational structure was found to be statistically significant with a positive sign. About 81.11 percent of respondents indicated that improving the organizational structure, such as hierarchy, friendliness, and delegation of authority, could positively impact their working conditions.

The analysis of communication and leadership also showed statistically significant results with an unexpected positive sign. The odds ratio indicates that a 1 percent increase in these factors can lead to a 78.24 percent increase in the chance of improving the quality of the workplace.

In addition, employee family financial support was found to be statistically significant at a 5 percent level of chi-square value with an unexpected positive sign. The odds ratio suggests that

respondents who receive good financial support from their employers have a higher likelihood of improved working conditions. Furthermore, the study emphasizes the importance of social security and safety measures for every worker. The results were statistically significant at a 5 percent level of chi-square value with an expected positive sign. The odds ratio indicates that respondents who receive employee family financial support are more likely to experience an improvement in the level of their workplace.

#### Problems faced by the Brick Kiln Workers

Most of the working-class people belong to the unorganised sector and they are facing problems like deprived working conditions, inflexible timing, wage differences & unprotected working environment. Workers belongs to brick industry are subjected to harsh working conditions which leads to occupational health hazards. Brick kiln workers are facing so many problems like wage discrimination, low wages, in security of jobs, flying dusts, lack of safety measures, risky & hot working environments, lack of sanitation facility and occupational health hazards.

The problems encountered by brick kiln workers were estimated using the Garrett ranking technique. Respondents assigned a numerical value to each factor, which was then converted to a rank using a formula. The objective was to identify the most important factor that impacts the workers' problems, and the Garrett ranking technique was employed for this purpose. Respondents were asked to rank all factors, and the resulting ranks were transformed into a score using the following formula:

$$\text{"Percent position"} = \frac{100 (R_{ij} - 0.5)}{N_j}$$

Where,

" $R_{ij}$ " = Rank given for the  $i$ th variable by  $j$ th respondents".

" $N_j$ " = Number of variable ranked by  $j$ th respondents".

**Table 4: Problems Faced by Brick Kiln Workers**

S. No	Problems	Rank
1	Low wages	6
2	Wage Discrimination	7
3	In security of Jobs	8
4	Flying dusts	3
5	Lack of safety measures	5
6	Risky and hot working environments	1
7	Lack of sanitary facility	2
8	Occupational health hazards	4

Most of the respondents complained regarding risky and hot working environments so it was ranked as first. Followed by lack of sanitary facility ranked as second, the next problem faced by them was flying dusts so it was ranked as third, due to dust problem respondents affected by occupational health hazards like shortness of breath with wheezing, asthma, ear and eye problem, so it was ranked as fourth. Safety measures are mandatory for

brick kiln workers so this problem ranked as sixth. Wage discrimination is one of the problem faced by the respondents it was ranked as seventh, then lack of job security ranked as eighth.

#### CONCLUSION

The brick kiln industry is an unorganised sector that is primarily concentrated in rural and semi-urban areas. Indian brick kilns are one of the world's largest industries. The study identified working conditions and major problems faced by brick kiln workers in Coimbatore. The working conditions of brick manufacturing units are very pathetic; the results revealed that respondents expressed their dissatisfaction towards their working conditions. Brick Kiln workers were facing various health problems like headaches, muscular disorders, respiratory disease like cold & Wheezing, Diarrhea, eye & Skin irritation. Brick kiln labourers are compelled to engage in manual labour for brief intervals, which often lead to significant or minor mishaps. Consequently, they suffer from various physical and mental injuries that adversely impact their health. Furthermore, the absence of proper facilities, such as access to clean drinking water, nutritious food, hygienic restrooms, and a secure work environment, exacerbates their situation. Therefore, it is imperative for the government to implement precautionary measures to improve the working conditions and minimize health hazards, ultimately improving the overall well-being of brick kiln workers.

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