

**EXPLORING MIGRANT AND NON-MIGRANT DIFFERENTIALS IN SOCIO-
DEMOGRAPHIC AND WORKING CONDITIONS AMONG BRICK KILN WORKERS IN
HOWRAH, WEST BENGAL**

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ABSTRACT :

Migration among brick kiln workers is a significant socio-economic phenomenon in India, particularly affecting marginalized communities. This study examines the socio-demographic and working characteristics of migrant and non-migrant brick kiln workers and identifies key determinants influencing migration status. Using primary data collected from brick kilns in Howrah, West Bengal, a comparative analysis of socio-demographic and working characteristics was conducted between migrant and non-migrant workers. Logistic regression analysis was performed to identify factors associated with migration status. Migrant workers were younger, predominantly female, and largely belonged to SC/ST communities compared to non-migrants. They faced poorer living conditions, including higher room density, lower education levels, and limited access to improved housing and sanitation. Logistic regression showed that migrants were more likely to work longer hours per day (AOR = 1.58, $p < 0.01$) and belong to SC/ST caste groups (AOR = 21.87, $p < 0.01$). They were less likely to have work years of engagement (AOR = 0.81, $p < 0.01$) or higher education (AOR = 0.10, $p < 0.05$). Alcohol consumption was also a significant factor (AOR = 6.77, $p < 0.05$). Migrant brick kiln workers experience significant vulnerabilities due to poorer socio-economic and working conditions. Targeted policies are needed to improve housing, sanitation, and education access.

Key-words: Brick Kilns; Labour migration; Socio-demographic status; Logistic regression.

INTRODUCTION:

The brick kiln industry is an unorganized sector of the Indian economy. Here 15 million people are working in nearly 1,40,000 brickfields.¹ In this industry, both local and seasonal migrant labour is engaged for 6-7 months every year. Seasonal migrant workers are those who migrate from their permanent residence to the brick kilns situated region, generally in the nearby state and districts, during the brick-making season, from November to May.² Most of these workers are attracted to the brick kiln industry through pull and push factors. The described push factors include poverty, unemployment, poor opportunities for agriculture, and low wages in the native place. The pull factors include better pay, demand for labour in the brick field during the season, and enhanced living standards.³ Migrant workers from all over the world are among the disadvantaged groups who have experienced significant social, economic, accommodation, workplace hazards, safety, and health disparities.⁴ The majority of migrants present in the brick kilns come from low socioeconomic backgrounds, and they face a lot of issues. These are a lack of social security, poor housing, poor diet, overcrowding and lack of shelter or housing facilities, and inadequate or poor supply of safe drinking water and sanitation.⁵⁻⁷ Earlier research found that migrant workers faced hazardous occupational conditions, long working hours, insecure and unstable employment and residency, and a high risk of injury or death. Studies indicate that migrants typically originate from rural or economically disadvantaged areas, where poverty, unemployment, and agricultural underemployment are prevalent.⁸ The health and safety risks for migrant workers are considerably higher. Poor workplace safety standards, coupled with long hours and repetitive tasks, expose migrants to musculoskeletal disorders, respiratory diseases, and workplace injuries.

Previous research has attempted to provide a simple quantitative description of workers in the brick kiln industry based on their basic socioeconomic status. There is no detailed comparative study of the socio-economic profiles and demographic background of migrant and non-migrant workers.

Addressing these gaps is critical in understanding the distinct conditions faced by these groups and informing policies aimed at improving their living and working conditions. Therefore, the objectives of the present study are -

OBJECTIVES:

- i. To examine the socio-demographic and working profile of the migrant and non-migrant brick kiln workers (BKW);
- ii. To analyze the factors affecting the workers' migration decisions.

METHODOLOGY:

Study area

The Howrah district of West Bengal, located between latitudes 22° 48' N to 22° 12' N and longitudes 88° 23' E to 87° 50' E, serves as the geographical focus of this study. The brick kilns are concentrated along the banks of the Hooghly and Rupnarayan Rivers (Fig 1).

Sampling process and data collection

Eight brick kilns were randomly selected, and data were collected from 25 workers at each kiln using a stratified random sampling method. The sampling accounted for workers' categories and migration status.⁹

The sample for this study was based on a total of 200 kiln workers from which interviews were to be conducted, but due to non-responses, the study was undertaken on 187 workers. Official consent and permission were sought from the kiln owners and Respondents, the study was approved by the Institutional Human Ethical Review Board of RNLKWC to protect participants' rights, anonymity, and wellbeing. Samples were gathered from March to May of the year 2024 at eight various brick manufacturing sites in the Howrah district of West Bengal. The survey was mainly conducted during break times or after working hours at 5 P.M Multiple questionnaire schedules were applied, and data were collected using the CAPI system in the CSPro program based on different aspects of socio-demographic characteristics of both migrant and local workers.

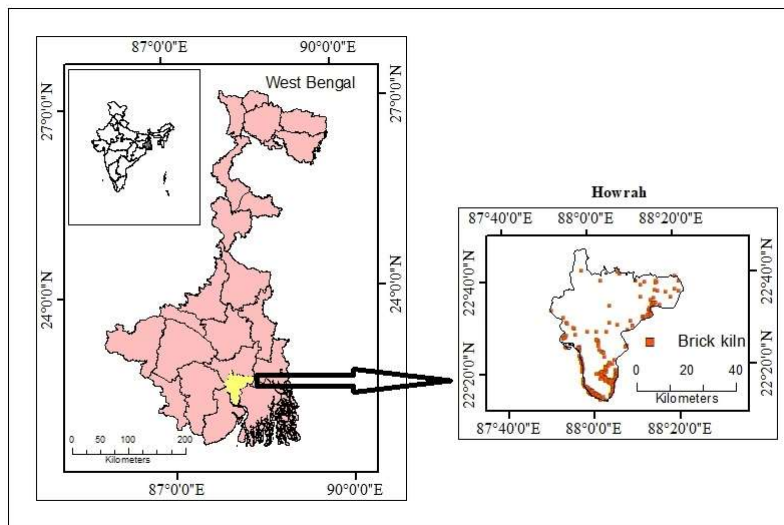


Fig 1 Study Area

PREPARATION OF DATA AND STATISTICAL METHOD:

The current study followed several steps for data processing and analysis. First, data pre-processing and descriptive statistical analysis were conducted, and missing values were removed during data preparation. The analysis was performed using STATA (version 16) software. A descriptive analysis was performed to deal with the variables, and categorical data were reported as frequency and percentage while quantitative data was reported as mean. In order to test for statistically meaningful differences between migrants and non-migrants, Z-tests were run for the continuous variables, while Chi-Square tests for the categorical variables. Lastly, logistic regression was employed to examine the association between migration status, the outcome variable, and a set of predictors, including age, monthly income, earning members, household size, working hours per day, work experience, gender, caste, education, marital status, alcohol consumption, house type, and toilet type. We assessed the dependency or multicollinearity among the predictor variables using the Variance Inflation Factor

(VIF) test. The association between migration status and predictor variables was estimated both with and without adjustment for socioeconomic factors. The study presents adjusted and unadjusted odds ratios and their corresponding 95% confidence intervals (CIs). Hence, the logit of P_i can be defined as:

$$\text{logit}(P_i) = \ln\left(\frac{P_i}{1 - P_i}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k$$

Where:

- **P_i**: Probability of migration status (1 = migrant, 0 = non-migrant).
- **β₀**: The intercept, representing the log odds of migration status when all predictor variables are zero.
- **β₁, β₂, ..., β_k**: Coefficients of the predictor variables
- **X₁, X₂, ..., X_k**: Predictor variables (e.g., age, income, household size, etc.).

RESULTS :

Table 1 presents the socio-demographic and working characteristics of both migrant and local workers. Migrant workers are significantly younger (mean age = 31.05 years) compared to non-migrant workers (mean age = 45.91 years; $Z = 84.09$, $p < 0.001$) and report a slightly higher average income (Rs 16,364.76 vs. Rs 15,477.85; $Z = -0.70$, $p < 0.001$). The average household size among migrants is marginally larger (mean = 4.56) than that of non-migrants (mean = 4.26), but this difference is not statistically significant ($Z = -1.70$, $p = 0.089$). Migrants work longer hours per day (mean = 12.13) compared to non-migrants (mean = 10.58; $Z = -8.80$, $p < 0.001$), while non-migrants (mean = 17.61) have significantly more years employed (mean = 6.02 years; $Z = 65.55$, $p < 0.001$) than the migrants. Room density, an indicator of overcrowding, is much higher for migrants (mean = 3.86) than for non-migrants (mean = 1.69; $Z = -12.27$, $p < 0.001$), reflecting poorer living conditions. Migrants are more likely to be female (43.90%) compared to non-migrants (10.96%; $\chi^2 = 23.35$, $p < 0.001$). Caste distribution reveals that migrants predominantly belong to SC/ST groups (82.93%), while non-migrants are more likely to come from General (55.48%) and OBC (25.34%) categories ($\chi^2 = 58.82$, $p < 0.001$), emphasising the intersection of caste and migration, with marginalised communities more prone to migrate. Education levels are significantly lower among migrants, with 63.41% having never attended school compared to 34.93% of non-migrants, while non-migrants have a higher proportion of middle school or above education (51.37% vs. 17.07%; $\chi^2 = 15.62$, $p < 0.001$). Migrants are also more likely to be unmarried or in non-union relationships (26.83%) compared to non-migrants (12.33%; $\chi^2 = 5.14$, $p = 0.023$), possibly reflecting differences in life stages. The prevalence of alcohol consumption is notably higher among migrants (75.61%) than non-migrants (43.15%; $\chi^2 = 13.49$, $p < 0.001$), which may be a coping mechanism for challenging living and working conditions. Housing conditions are

Table 1 Socioeconomic, Demographic, and Working Attributes of Brick Kiln Workers

Variables	Total (N=187)	Non- migrant (N=146)	Migrant (N=41)	Z Value	P- value
	Mean	Mean	Mean		
Age	42.65	45.91	31.05	84.09	0.000
Monthly income	15672.31	15477.85	16364.76	-0.70	0.000
Earning member	1.99	1.83	2.59	-4.28	0.000
Household size	4.33	4.26	4.56	-1.70	0.089
Working hours per day	10.92	10.58	12.13	-8.80	0.000
Work Experience years	15.07	17.61	6.02	65.55	0.000
Room density	2.17	1.69	3.86	-12.27	0.000

Variables	Category	Total N (%)	Non-Migrants N (%)	Migrant N (%)	Chi-Square Statistic (χ^2)	P-Value
Gender	Male	153 (81.82)	130 (89.04)	23 (56.10)	23.35	<0.000
	Female	34 (18.18)	16 (10.96)	18 (43.90)		
Caste	General	85 (45.45)	81 (55.48)	4 (9.76)	58.82	<0.000
	OBC	40 (21.39)	37 (25.34)	3 (7.32)		
	SC & ST	62 (33.16)	28 (19.18)	34 (82.93)		
Education	Not attending school	77 (41.18)	51 (34.93)	26 (63.41)	15.62	<0.000
	Primary (1-4)	28 (14.97)	20 (13.70)	8 (19.51)		
	Middle school & more	82 (43.85)	75 (51.37)	7 (17.07)		
Marital status	Not Union	29 (15.51)	18 (12.33)	11 (26.83)	5.14	0.023
	Union	158 (84.49)	128 (87.67)	30 (73.17)		
Alcohol consumption	Yes	94 (50.27)	63 (43.15)	31 (75.61)	13.49	<0.000
	No	93 (49.73)	83 (56.85)	10 (24.39)		
Smoking behaviour	Yes	78 (41.71)	65 (44.52)	13 (31.71)	2.16	0.141
	No	109 (58.29)	81 (55.48)	28 (68.29)		
House Types	Pucca	80 (42.78)	67 (45.89)	13 (31.71)	43.85	<0.000
	Semi-pucca	80 (42.78)	71 (48.63)	9 (21.95)		
	Kutchha	27 (14.44)	8 (5.48)	19 (46.34)		
Toilet type	Improve	104 (55.61)	91 (62.33)	13 (31.71)	20.97	<0.000
	Unimproved	75 (40.11)	53 (36.3)	22 (53.66)		
	open Defecation	8 (4.28)	2 (1.37)	6 (14.63)		
Cooking Facilities	Clean Cooking Facilities	64 (34.22)	64 (43.84)	0 (0.00)	27.32	<0.000
	Unclean Cooking Facilities	123 (65.78)	82 (56.16)	41 (100.0)		

Poorer for migrants, with 46.34% living in kutchha houses compared to 5.48% of non-migrants, who predominantly reside in pucca (45.89%) and semi-pucca (48.63%) houses ($\chi^2 = 43.85$, $p < 0.001$). Similarly, migrants have less access to improved toilets (31.71%) compared to non-migrants (62.33%; $\chi^2 = 20.97$, $p < 0.001$), with higher rates of unimproved toilets (53.66%) and open defecation (14.63%). Moreover, migrants exclusively use unclean cooking facilities (100.0%) compared to 56.16% of non-migrants ($\chi^2 = 27.32$, $p < 0.001$), highlighting significant disparities in access to basic amenities and hygiene.

Table 2 shows the logistic regression analysis on migration status with socio-demographic and working characteristics. This study examined the factors associated with migration status (migrant vs. non-migrant) to socio-demographic and working status among BKWs. Age showed a significant association in the unadjusted model, where younger workers had higher odds of being migrants (UOR = 0.91, 95% CI: 0.88–0.94, $p < 0.001$). However, this relationship became non-significant in the adjusted model (AOR = 1.01, 95% CI: 0.92–1.10). Earning members were significantly associated with migration in the unadjusted model (UOR = 1.97, 95% CI: 1.41–2.77, $p < 0.001$), though this effect was not sustained after adjustment (AOR = 1.21, 95% CI: 0.50–2.95). Similarly, household size and monthly income did not show significant associations in either model. The number of working hours per day was significantly higher among migrants. Each additional

working hour increased the odds of being a migrant (UOR = 1.27, 95% CI: 1.08–1.48, $p < 0.001$), and this association remained significant after adjustment (AOR = 1.58, 95% CI: 1.14–2.17, $p < 0.01$). Conversely, work experience was inversely related to migration status, with less experienced workers having higher odds of migration. The unadjusted odds (UOR = 0.83, 95% CI: 0.77–0.89, $p < 0.001$) remained significant in the adjusted model (AOR = 0.81, 95% CI: 0.70–0.92, $p < 0.01$). Gender also influenced migration, as female workers had significantly higher odds of being migrants in the unadjusted model (UOR = 6.36, 95% CI: 2.86–14.44, $p < 0.001$).

Table 2 Results of Univariate and Multivariate Logistic Regression Analysis for Determinants of Migration Status

Variables	Category	UOR	AOR
Age		0.91***(0.88-0.94)	1.01 (0.92 - 1.10)
Monthly income		1 (0.99-1.00)	
Earning member		1.97***(1.41-2.77)	1.21 (0.50 - 2.95)
Household size		1.13 (0.91-1.40)	
Working hours per day		1.27***(1.08-1.48)	1.58**(1.14 - 2.17)
Work Experience		0.83***(0.77-0.89)	0.81**(0.70 - 0.92)
Gender	Male	Ref	Ref
	Female	6.36***(2.86-14.44)	2.42 (0.20 - 29.00)
Caste	General	Ref	Ref
	OBC	1.64(0.31-7.81)	0.45 (0.05 - 3.98)
	SC & ST	24.59*** (8.86-87.96)	21.87** (3.42 - 139.99)
Education	Not attending school	Ref	Ref
	Primary (1-4)	0.78 (0.29 - 1.97)	1.37 (0.17 - 11.24)
	Middle school & more	0.18***(0.07 - 0.43)	0.10*(0.01 - 0.76)
Marital status	Not Union	Ref	Ref
	Union	0.38* (0.17 - 0.92)	0.33 (0.05 - 2.25)
Alcohol consumption	No	Ref	Ref
	Yes	4.08 *** (1.86 - 8.95)	6.77*(1.10 - 41.64)
House Types	Pucca	Ref	Ref
	Semi-pucca	0.65 (0.26 - 1.63)	5.07 (0.55 - 46.85)
	Kutchha	12.24*** (4.43 - 33.86)	11.60 (0.78 - 172.14)
Toilet type	Improve	Ref	Ref
	Unimproved & open Defecation	3.56** (1.70 - 7.45)	0.74 (0.08 - 6.70)

Significant codes: '***' 0.001 '**' 0.01 '*' 0.05 '

However, this association was not significant in the adjusted model (AOR = 2.42, 95% CI: 0.20–29.00). Caste emerged as a strong predictor, with workers belonging to SC/ST categories being more likely to migrate compared to those in the General caste (UOR = 24.59, 95% CI: 8.86–87.96, $p < 0.001$; AOR = 21.87, 95% CI: 3.42–139.99, $p < 0.01$). Migrants were also less educated; workers

with middle school or higher education had significantly lower odds of migration compared to those who never attended school (UOR = 0.18, 95% CI: 0.07–0.43, $p < 0.001$; AOR = 0.10, 95% CI: 0.01–0.76, $p < 0.05$). Marital status was also related to migration in the unadjusted model, where workers in union status had lower odds of migration (UOR = 0.38, 95% CI: 0.17–0.92, $p < 0.05$). However, this association remained insignificant after adjustment (AOR = 0.33, 95% CI: 0.05–2.25). Migrants were also more likely to report alcohol consumption compared to non-migrants. Alcohol users had significantly higher odds of migration in both the unadjusted (UOR = 4.08, 95% CI: 1.86–8.95, $p < 0.001$) and adjusted models (AOR = 6.77, 95% CI: 1.10–41.64, $p < 0.05$). Housing and sanitation conditions also differed between migrant and non-migrant workers. Migrants were significantly more likely to live in kutchha houses in the unadjusted model (UOR = 12.24, 95% CI: 4.43–33.86, $p < 0.001$), but this association was not significant in the adjusted model (AOR = 11.60, 95% CI: 0.78–172.14). Similarly, toilet facilities were poorer among migrants. Those practicing unimproved sanitation or open defecation had significantly higher odds of migration in the unadjusted model (UOR = 3.56, 95% CI: 1.70–7.45, $p < 0.01$), but this association became non-significant after adjustment (AOR = 0.74, 95% CI: 0.08–6.70).

Overall, migration status among BKWs was significantly associated with younger age, fewer years of work experience, longer working hours, belonging to marginalized caste groups (SC/ST), lower education, alcohol consumption, and poorer housing and sanitation conditions. These findings highlight the vulnerabilities of migrant workers compared to their non-migrant counterparts in the brick kiln industry.

DISCUSSION :

The findings of this study demonstrate that migrant workers are different from local workers in terms of socio-demography and working conditions. Such differences may include age, monthly income, the number of earning members, number of working hours per day, years of working experience, room population density, gender, caste, educational qualification, and marital status. Also, differences are found in behaviours like drinking habits and living amenities in houses, toilets, and cooking facilities. While comparing the migration status with both the groups of BKWs, it was observed that the migration status has a stronger relation to younger age, less working experience, long working hours, belonging to a scheduled caste/scheduled Tribe, less educated, alcohol-consuming workers, and having the worst type of house and sanitation facilities in the brick kiln areas.

The migrant workers were younger than the non-migrant workers. This is because both adults and children, as well as youths, travel in large numbers to work in this sector. Younger people also move from one region to another to find employment, as they seek a source of income to support their households.¹⁰⁻¹¹ Migrants bring their families to places of work thereby having relatively more persons per household engaged in wage employment than often locals. Indeed, this model of collaboration regarding work enables migrant families to earn higher incomes.¹² The migrants had less experience working in a brick kiln than their non-migrant counterparts. This is primarily because a large proportion of migrants are either young or new to the labour market. Furthermore, some workers migrate to brick kiln jobs from other professions, resulting in less employee experience among the migrants. But Migrants work longer hours than non-migrants, aiming to complete contracts and earn more money.¹³ Caste category emerged as a significant determinant of migration, with Scheduled Caste (SC) and Scheduled Tribe (ST) workers working more among migrants than non-migrants in brick kilns. Many of these groups own limited agricultural land and have low literacy levels and this acts to force them into labour-intensive jobs such as engaging in brick kiln employment.¹⁴ The insignificant presence of SC/ST non-migrants in the Howrah district can be attributed to the fact that SCs constitute only 14.82% while the STs constitute only 0.3% of the total population in the area. The monthly income of migrant workers is higher than that of local workers. However, a significant portion of their earnings is spent on alcohol consumption, as they exhibit higher rates of alcohol use, which reduces their disposable income for other necessities.¹⁵ Migrants face overcrowded housing with higher room density and live in kutchha houses with poor sanitation,

often relying on open defecation. They also use unclean cooking facilities, increasing their risk of respiratory and communicable diseases.

CONCLUSION :

This study shows that migrant and non-migrant brick kiln workers have notable differences in socio-demographic and working conditions. Most migrants are younger, put in more hours, and have less work experience than their non-migrant counterparts. Their living conditions are also challenging for them; they have less number rooms per household and less access to clean cooking techniques and sanitary facilities. Furthermore, migrants have higher rates of alcohol consumption and lower educational attainment, which reflects their socioeconomic vulnerabilities. However, this study has some limitations. The cross-sectional design restricts causal inferences, as it captures a single point in time rather than the dynamics of migration and its consequences. Self-reported data may introduce biases, particularly in reporting income, and alcohol consumption. Moreover, the focus on brick kiln workers in Howrah, West Bengal, limits the generalizability of the findings to other regions or industries with different socio-economic contexts. Policy interventions are urgently needed to address these disparities. Improving access to quality housing, sanitation, and clean cooking facilities should be a priority. Future research should consider longitudinal designs and explore the conditions of migrant workers across other regions and sectors to build a more comprehensive understanding of migration's socio-economic impacts.

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