



Understanding Internal Labour Migration: Motivations among Migrant Construction Workers in Bhubaneswar

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Abstract

Internal labour migration significantly shapes urban labour markets in India, particularly within the construction sector, which depends heavily on informal migrant workers. This study examines the motivations underlying migration decisions among construction workers in Bhubaneswar, an emerging urban centre in eastern India. Primary data were collected from 1,002 migrant workers through a structured questionnaire, and Principal Component Analysis (PCA) was employed to identify the underlying dimensions of migration motivations. The results reveal six key components that collectively explain 64.78 percent of the total variance: economic livelihood distress, demographic and household pressure, aspirational and social mobility drivers, urban employment and wage attraction, environmental and climate vulnerability, and social network facilitation. Economic distress emerges as the dominant factor, reflecting rural structural challenges including declining agricultural productivity, unemployment, and indebtedness. Alongside economic compulsions, non-economic factors, particularly household obligations, aspirations for improved living standards, and prospects for social mobility, play a significant role in shaping migration decisions. The findings further highlight the influence of environmental stressors, including drought and flood exposure, and underscore the critical role of social networks and labour intermediaries in facilitating and sustaining migration flows. Collectively, the study demonstrates that migration to Bhubaneswar is driven by a complex and multi-layered interplay of compulsion and aspiration rather than by economic incentives alone. These findings carry important policy implications, underscoring the need for integrated interventions that address rural livelihood vulnerabilities while simultaneously improving labour conditions, social protection, and welfare provisions for migrant workers in urban construction markets.

Keywords: Internal labour migration; Construction workers; Migration motivations; Aspirational migration; Social networks

1. Introduction

Internal labour migration is a central feature of the Indian economy, playing a crucial role in sustaining urban growth while providing livelihood opportunities for workers from economically weaker regions (Kumar, 2025). Migration allows labour to move from areas with limited employment opportunities to regions experiencing expansion in infrastructure, industry, and services (Nguyen et al., 2024). However, despite its importance in supporting economic development, internal migration in India often occurs outside formal institutional frameworks. Migrant workers frequently remain excluded from stable labour protection, social security systems, and urban welfare planning, making them vulnerable to insecure employment and uncertain living conditions (Sabates-Wheeler & Koettl, 2010; Kazi-Aoul et al., 2023; Mieres, 2025). These vulnerabilities are especially visible in construction, a sector that depends heavily on migrant labour while remaining highly informal and least regulated (Srivastava & Sutradhar, 2016). Understanding the factors that influence workers to migrate into this sector is therefore essential for both academic analysis and policy formulation.

In recent decades, the pattern of internal migration in India has undergone important changes. Earlier migration streams were largely directed toward large metropolitan cities (Narayan, 2025), but increasing evidence shows that medium-sized and rapidly growing urban centres are now attracting substantial numbers of migrant workers (Brugiavini et al., 2025). These cities provide expanding employment opportunities, relatively lower living costs, and geographical proximity to rural source regions, making them attractive destinations for short-term and circular migration (Ding et al., 2023). Despite this shift, migration research has continued to focus mainly on large metropolitan destinations, leaving migration into emerging urban centres comparatively underexplored. As a result, the specific factors influencing migration to such cities require closer empirical investigation.

Odisha has historically been known as a source region of labour migration due to structural constraints such as agrarian distress, fragmented landholdings, limited rural employment, and restricted opportunities for economic mobility (Meher, 2019; Mishra, 2024). Workers from several districts migrate in search of better income and more stable employment. While earlier migration from Odisha was largely directed toward other states, recent years have witnessed increasing movement toward urban centres within the state itself (Barik & Barik, 2024). This trend reflects the expansion of local labour markets, particularly in the construction sector, which has grown rapidly with the rise of infrastructure development and urbanization. Bhubaneswar, the capital city of Odisha, has emerged as one of the major destinations for such migration. The city's growth in real estate, public infrastructure, and private construction activities has created continuous demand for manual and semi-skilled labour, attracting workers from rural Odisha as well as neighbouring states.

The literature on migration has traditionally explained labour mobility through economic factors such as wage differentials and employment opportunities (Aswani & Bhat, 2022). Classical migration theories suggest that workers move from low-income rural areas to higher-income urban sectors in response to expected income differences, better earnings, and improved livelihood prospects (Harris & Todaro, 1970; Selod & Shilpi, 2021). However, migration is not only an individual wage-maximising decision. The new economics of labour migration explains migration as a household strategy for managing risk, diversifying income, and responding to livelihood insecurity (Stark & Bloom, 1985).

Studies on internal migration in India have also shown that construction work often offers higher daily wages compared to agricultural labour or rural casual employment, making it an important destination for migrant workers (Madan & Dangi, 2023). However, migration decisions in informal labour markets cannot be explained solely by income differences.

Workers frequently migrate under conditions of uncertainty, without complete information about wages, job stability, living arrangements, or working conditions. These uncertainties make migration a risky decision, especially for workers with limited resources.

In this context, the present study focuses on migrant construction workers in Bhubaneswar to examine the major factors that influence their decision to migrate. By analysing economic, social, and network-related determinants of migration, the study seeks to provide a clearer understanding of why workers move to this rapidly growing urban centre. The objective of the study is to understand the major factors that influence construction workers to migrate to Bhubaneswar. Through this analysis, the research contributes to the literature on internal labour migration by providing evidence from an emerging urban destination and by highlighting the role of multiple interacting factors in shaping migration decisions among informal sector workers.

2. Review of Literature

2.1. Internal Labour Migration and the Construction Sector

Internal labour migration in India has emerged as a defining feature of structural transformation, particularly within the rapidly expanding construction sector. The sector is one of the largest absorbers of informal labour, employing millions of workers, a significant proportion of whom are migrants engaged in short-term and circular mobility (Dhal, 2020). Existing studies highlight that construction accounts for a substantial share of temporary migration in India, driven by the growth of infrastructure and urban development across states. Migration flows are spatially patterned, with workers moving predominantly from economically disadvantaged regions such as Odisha, Bihar, and Uttar Pradesh toward urban centres (Acharya & Reddy, 2016; Srinivasan et al., 2023). While interstate migration has historically dominated, recent evidence indicates increasing intra-state migration toward emerging urban hubs such as Bhubaneswar, reflecting localized labour market expansion and urban growth dynamics (Joshi et al., 2022; Deshingkar, 2023; Behera et al., 2024).

2.2. Economic Drivers: Push-Pull Dynamics of Migration

The literature widely explains migration decisions through the push-pull framework, emphasizing the interaction between adverse conditions at the origin and perceived opportunities at the destination. At the origin, migration is primarily driven by structural constraints such as rural unemployment, underemployment, and lack of livelihood opportunities (Bellampalli & Yadava, 2022; Madan & Dangi, 2023). Low agricultural wages and persistent poverty further intensify migration pressures (Pingali et al., 2019; Bellampalli & Yadava, 2022; Madan & Dangi, 2023). Additionally, indebtedness plays a crucial role, as workers often migrate to repay loans or escape local financial constraints (Pingali et al., 2019; Dash, 2023; Deshingkar, 2023).

At the destination, the construction sector offers relatively higher wages and more consistent employment compared to seasonal agriculture (Madan & Dangi, 2023). Empirical evidence suggests that migrants are attracted by wage differentials and the possibility of regular income (Pingali et al., 2019; Srinivasan et al., 2023). Migration is also associated with aspirations for improved living standards including investments in education, land, and household welfare (Bellampalli & Yadava, 2022; Deshingkar, 2023). Beyond economic motivations, migration decisions are increasingly understood through subjective dimensions such as wellbeing and life satisfaction. Studies focusing on migrant workers in Bhubaneswar indicate that migration is linked to aspirations for social mobility and improved quality of life (Deshingkar, 2023; Behera et al., 2024).

2.3. Social Networks and Migration Systems

A growing body of literature highlights the central role of social networks in shaping migration processes. Migration is embedded within network structures that facilitate mobility, reduce risks, and provide support systems (Reja & Das, 2019). Kinship ties, village networks, and caste-based affiliations play a crucial role in disseminating information about employment opportunities and facilitating migration (Tom & Dutta, 2025). These networks reduce transaction costs associated with migration, including job search and accommodation (Pingali et al., 2019). Intermediaries such as labour contractors (sardars or thekedars) are key actors in recruitment and job placement in the construction sector (Dash, 2023; Patra, 2025; Sarma & Nath, 2025). While they facilitate employment, they also create dependency structures that limit workers' bargaining power (Patra, 2025). Thus, social networks function both as support mechanisms and as systems of labour control.

3. Methods

3.1. Study Area

Bhubaneswar, the capital city of Odisha, is one of the fastest-growing urban centres in eastern India and serves as a major administrative, economic, and cultural hub (Fig. 1). Located in the Khordha district, it is part of the Bhubaneswar-Cuttack urban agglomeration, a key corridor of urban development in the state. The city was originally planned in the post-independence period, but in recent decades it has expanded rapidly beyond its planned boundaries due to increasing investments in infrastructure, real estate, education, and healthcare.

The pace of urbanization in Bhubaneswar has led to a significant expansion of the construction sector, which plays a central role in the city's economic growth. Large-scale development of residential complexes, commercial establishments, and public infrastructure has generated a continuous demand for labour, particularly for manual and semi-skilled workers. As a result, the city has emerged as an important destination for migrant workers, especially from rural areas of Odisha and neighbouring states.

Bhubaneswar's relatively lower cost of living, geographical proximity to rural source regions, and availability of employment opportunities make it particularly attractive for short-term and circular migration. However, the rapid growth of the city has also resulted in uneven urban development. Migrant construction workers often live in temporary or informal settlements near worksites, where access to basic services such as safe drinking water, sanitation, and healthcare remains inadequate. The informal nature of employment further exposes them to job insecurity and limited social protection. Given these dynamics, Bhubaneswar provides a relevant context for examining the patterns, determinants, and implications of internal labour migration, particularly within the construction sector.

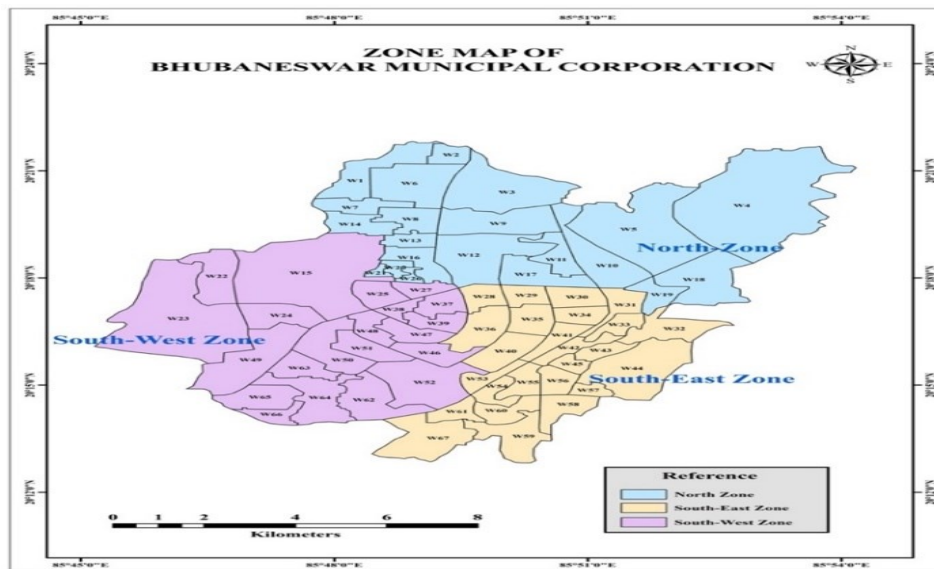


Fig 1: Study area map

Source: Prepared by the authors'

3.2. Database and Sampling Strategies

The study is based on primary data collected from 1,002 migrant construction workers in Bhubaneswar, Odisha, using a structured questionnaire. Data collection was conducted between August 2025 and December 2025. The sampling frame consisted of migrant construction workers employed at active residential, commercial, and infrastructure construction sites within the Bhubaneswar urban area during the study period. A site-based sampling approach was adopted to capture variation in project type, scale, and location across the city, thereby increasing the diversity of the sampled workforce. Rather than relying on a single employer, contractor, or project category, workers were recruited from multiple construction sites representing different segments of the construction sector.

Within each selected site, respondents were identified using purposive and convenience sampling, focusing on actively employed migrant workers who were available and willing to participate during break periods or after work. Access to some construction sites required informal permission from contractors or site supervisors, which may have influenced site accessibility and participant availability. Consequently, the possibility of gatekeeping bias cannot be entirely ruled out. To reduce this risk, data collection was conducted across multiple geographically dispersed sites, and respondents were approached directly wherever access was permitted. Contractors and site supervisors were not involved in administering the questionnaire, recording responses, or influencing participation decisions. Participation was entirely voluntary, and informed verbal consent was obtained from all respondents after explaining the objectives and voluntary nature of the study. Respondents were assured of anonymity and confidentiality, and no personally identifiable information was collected. The study was conducted in accordance with standard ethical guidelines for social science research involving human participants.

Approximately 1,190 migrant construction workers were approached for participation in the survey. Of these, 1,005 workers agreed to participate, resulting in an initial response rate of approximately 84.45 percent. Prior to analysis, all completed questionnaires were screened for completeness and consistency. Three questionnaires containing substantial missing responses were excluded from the dataset. Since the proportion of missing data was minimal and restricted to incomplete questionnaires, no imputation procedures were applied. The final analysis was therefore conducted using 1,002 complete responses.

The questionnaire was developed following an initial qualitative exploration phase. Semi-structured interviews were conducted to identify key migration motivations, and data collection continued until saturation was achieved. This process resulted in 31 migration-related variables (Table 1), which were subsequently converted into structured statements and measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The variables presented in Table 1 represent condensed labels of the original questionnaire statements used during the survey, while the complete wording of all items is provided in Appendix A. The collected data were coded, cleaned, and analysed using Principal Component Analysis (PCA) to identify the underlying dimensions of migration motivations. The database provides a comprehensive empirical basis for understanding the multidimensional drivers of internal labour migration among construction workers in an emerging urban destination.

Table 1: Motivations for migration

Code	Reasons/motivations	Code	Reasons/motivations
X ₁	Declining crop productivity	X ₁₇	Marriage and social ceremony costs
X ₂	Frequent crop failure	X ₁₈	Responsibility to support family income
X ₃	Rising agricultural input costs	X ₁₉	Availability of employment opportunities
X ₄	Small and fragmented landholdings/landlessness	X ₂₀	Higher wages
X ₅	Seasonal unemployment	X ₂₁	Regular income
X ₆	Irregular or low rural wages	X ₂₂	Overtime earnings
X ₇	Agricultural or business debt	X ₂₃	Presence of relatives
X ₈	Lack of rural job opportunities	X ₂₄	Friends and neighbours in cities
X ₉	Business failure	X ₂₅	Labour contractor influence
X ₁₀	Flood and cyclone occurrence	X ₂₆	Desire for social status improvement
X ₁₁	Irregular rainfall and drought	X ₂₇	Urban lifestyle attraction
X ₁₂	Lack of irrigation water	X ₂₈	Better housing aspirations
X ₁₃	Large household size	X ₂₉	Exposure to modern consumer goods
X ₁₄	High dependency ratio	X ₃₀	Personal autonomy
X ₁₅	Education expenses	X ₃₁	Saving to start a business
X ₁₆	Healthcare expenditure		

Source: Based on primary survey

Table 2: Socio-demographic characteristics of respondents

Variables		Frequency	Percentage
Number of participants		1002	100
Age group	15-20	32	3.19
	21-29	454	45.31
	30-45	436	43.51
	46-60	80	7.98
Gender	Male	712	71.06
	Female	290	28.94
Marital status	Unmarried	300	29.94
	Married	682	68.06
	Widowed	20	2.00
Occupation	Labourer	579	57.78
	Mason	130	12.97
	Electrician	72	7.19
	Carpenter	47	4.69
	Plumber	68	6.79
	Painter	70	6.99
	Tile, marble and mosaic setter (TMAMS)	36	3.59
Education	Uneducated	264	26.35
	Primary school	399	39.82
	Secondary school	207	20.66

Monthly income (INR)	Higher Secondary	84	8.38
	College graduate	26	2.59
	Technical college	22	2.20
	5000-10000	579	57.78
	11000-15000	158	15.77
	16000-20000	143	14.27
	21000-25000	66	6.59
	26000-35000	56	5.59

Source: Based on primary survey

To provide a comprehensive understanding of the sample characteristics, the socio-demographic profile of the respondents is presented in Table 2. The study includes 1,002 migrant construction workers, with the majority belonging to the age group of 21-29 years (45.31%) and 30-45 years (43.51%), indicating a predominantly young and economically active workforce. Male workers constitute a larger proportion of the sample (71.06%), reflecting gendered patterns in construction labour participation.

A significant majority of respondents are married (68.06%), suggesting household responsibilities as a potential driver of migration. In terms of occupation, most respondents are general labourers (57.78%), followed by skilled categories such as masons and electricians. Educational attainment remains low, with a large proportion having only primary education (39.82%) or no formal education (26.35%), indicating limited human capital and skill diversification.

Income distribution shows that more than half of the respondents (57.78%) earn between INR 5,000-10,000 per month, reflecting the low-income nature of construction work. Overall, the socio-demographic characteristics highlight the economic vulnerability and limited opportunities faced by migrant workers, reinforcing the relevance of the study context.

4. Results and Discussion

4.1. Results

4.1.1. Sampling Adequacy and Factorability

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.914, exceeding the recommended threshold of 0.90 and indicating excellent sampling adequacy for factor analysis (Kaiser, 1974). Bartlett's Test of Sphericity was statistically significant ($\chi^2 = 14645.98$, $df = 465$, $p < 0.001$), confirming that the correlation matrix was factorable and that PCA was appropriate for the data as presented in Table 3.

Table 3: KMO and Bartlett's sample acceptability test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.914
Bartlett's Test of Sphericity	Approx. Chi-Square	14645.98
	df	465
	Sig.	0.000

Source: Estimated using primary data

4.1.2. Extraction and Variance Explanation

PCA extraction yielded six components with eigenvalues greater than 1, collectively explaining 64.78 percent of the total variance in migration motivations as presented in Table 4. The rotated solution using Varimax rotation distributed the variance more evenly across components, facilitating interpretability. Additionally, to verify the suitability of orthogonal rotation, the PCA was estimated using Direct Oblimin oblique rotation. The oblique solution produced a

nearly identical factor structure with relatively low inter-factor correlations ranging from 0.086 to 0.239, indicating limited overlap among the extracted components (Table 5). In addition, no meaningful cross-loadings emerged under the oblique solution. Varimax rotation was therefore retained for its interpretive clarity and parsimony (Hair et al., 2010; Tabachnick & Fidell, 2019).

Table 4: Dimension-wise total variance explained in PCA

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.17	23.14	23.14	7.17	23.14	23.14	5.83	18.81	18.81
2	3.86	12.44	35.59	3.86	12.44	35.59	3.86	12.45	31.25
3	3.05	9.85	45.44	3.05	9.85	45.44	3.71	11.95	43.21
4	2.44	7.86	53.29	2.44	7.86	53.29	2.42	7.81	51.02
5	1.84	5.93	59.22	1.84	5.93	59.22	2.19	7.06	58.08
6	1.72	5.56	64.78	1.72	5.56	64.78	2.07	6.69	64.78

Source: Estimated using primary data

Table 5: Component correlation matrix

Component Correlation Matrix						
Component	1	2	3	4	5	6
1	1.000	0.163	0.239	0.203	0.102	0.086
2	0.163	1.000	0.179	0.137	0.151	0.100
3	0.239	0.179	1.000	0.142	0.209	0.162
4	0.203	0.137	0.142	1.000	0.176	0.195
5	0.102	0.151	0.209	0.176	1.000	0.143
6	0.086	0.100	0.162	0.195	0.143	1.000

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

Source: Estimated using primary data

The six-component solution demonstrates that construction worker migration to Bhubaneswar is driven by multiple, distinct dimensions rather than a single dominant factor. Notably, the first component alone explains 23.14 percent of variance after rotation, indicating that while economic distress is significant, it does not overshadow other migration drivers.

4.1.3. Major Factors Influencing Construction Workers' Migration to Bhubaneswar

PCA extraction resulted in six interpretable components representing the major dimensions underlying migration motivations among construction workers in Bhubaneswar. Based on the conceptual similarity and loading patterns of the variables, the components were labelled as: (1) Economic Livelihood Distress (ELD), (2) Demographic and Household Pressure (DHP), (3) Aspirational and Social Mobility Drivers (ASM), (4) Urban Employment and Wage Attraction (UEA), (5) Environmental and Climate Vulnerability (ECV), and (6) Social Networks and Migration Systems (SNM). For analytical clarity, the original survey variables coded as X₁-X₃₁ in Table 1 were subsequently interpreted and discussed under these thematic component abbreviations (Table 6) following PCA extraction and rotation. Only variables with absolute rotated loadings ≥ 0.70 were retained for interpretation. The retained variables exhibited strong associations with their respective principal components.

Table 6: Rotated components matrix, factor loadings and reliability

Component Serial Number	Principal Components	Original Item Code	equivalent Thematic Code after PCA	Motivations	1	2	3	4	5	6	OMEGA	Cronbach alpha
1	Economic Livelihood Distress (ELD)	X ₅	ELD1	Seasonal unemployment	0.837						0.932	0.931
		X ₃	ELD2	Rising agricultural input costs	0.817							
		X ₆	ELD3	Irregular or low rural wages	0.813							
		X ₄	ELD4	Small and fragmented landholdings/ landlessness	0.804							
		X ₉	ELD5	Business failure	0.803							
		X ₁	ELD6	Declining crop productivity	0.781							
		X ₂	ELD7	Frequent crop failure	0.777							
		X ₇	ELD8	Agricultural or business debt	0.768							
		X ₈	ELD9	Lack of job opportunities	0.743							
2	Demographic and Household Pressure (DHP)	X ₁₈	DHP1	Responsibility to support family income		0.824					0.887	0.886
		X ₁₃	DHP2	Large household size		0.820						
		X ₁₅	DHP3	Education expenses		0.796						
		X ₁₄	DHP4	High dependency ratio		0.778						
		X ₁₇	DHP5	Marriage and social ceremony costs		0.766						
		X ₁₆	DHP6	Healthcare expenditure		0.753						
3	Aspirational and Social Mobility (ASM)	X ₂₆	ASM1	Desire for social status improvement			0.791				0.873	0.873
		X ₂₉	ASM2	Exposure to modern consumer goods			0.783					
		X ₂₇	ASM3	Urban lifestyle attraction			0.767					
		X ₃₀	ASM4	Personal autonomy			0.759					
		X ₃₁	ASM5	Saving to start a business			0.754					
		X ₂₈	ASM6	Better housing aspirations			0.745					
4	Urban Employment and Wage Attraction (UEA)	X ₂₂	UEA1	Overtime earnings				0.794			0.778	0.777
		X ₁₉	UEA2	Availability of employment opportunities				0.779				

		X ₂₀	UEA3	Higher wages				0.740				
		X ₂₁	UEA4	Regular income				0.721				
5	Environmental and Climate Vulnerability (ECV)	X ₁₁	ECV1	Irregular rainfall and drought					0.848		0.818	0.818
		X ₁₀	ECV2	Flood and cyclone occurrence					0.842			
		X ₁₂	ECV3	Lack of irrigation water					0.829			
6	Social Networks and Migration Systems (SNM)	X ₂₃	SNM1	Presence of relatives						0.835	0.771	0.770
		X ₂₄	SNM2	Friends and neighbours in cities						0.802		
		X ₂₅	SNM3	Labour contractor influence						0.801		

Extraction Method: Principal Component Analysis (Varimax)

Source: Estimated using primary data

4.1.4. Measure Reliability

Internal consistency reliability was assessed for each extracted component using both Cronbach's alpha (α) and McDonald's omega (ω). McDonald's omega is reported alongside Cronbach's alpha as it provides a less assumption-dependent estimate of reliability that does not require tau-equivalence across items (McNeish, 2018). As presented in Table 6, all six components demonstrated acceptable to excellent reliability. Component 1 (Economic Livelihood Distress) showed the highest reliability ($\omega = 0.932$, $\alpha = 0.931$), followed by Component 2 (Demographic and Household Pressure; $\omega = 0.887$, $\alpha = 0.886$), Component 3 (Aspirational and Social Mobility Drivers; $\omega = 0.873$, $\alpha = 0.873$), Component 5 (Environmental and Climate Vulnerability; $\omega = 0.818$, $\alpha = 0.818$), Component 4 (Urban Employment and Wage Attraction; $\omega = 0.778$, $\alpha = 0.777$), and Component 6 (Social Networks and Migration Systems; $\omega = 0.771$, $\alpha = 0.770$). All values exceeded the commonly accepted threshold of 0.70 (Nunnally, 1978; Hair et al., 2010), confirming the internal consistency of the measurement structure across all six dimensions.

4.1.5. Factor Retention: Parallel Analysis

To determine the number of components to retain, parallel analysis was conducted using 500 randomly generated datasets matching the study's specifications ($N = 1,002$; $p = 31$ variables), following Horn (1965) and O'Connor (2000). Only components whose real-data eigenvalues exceeded the 95th percentile of the simulated eigenvalue distribution were retained. As presented in Table 7, the real-data eigenvalues for the first six components (7.175, 3.858, 3.053, 2.435, 1.837, and 1.723) each exceeded their corresponding 95th-percentile random thresholds (1.380, 1.327, 1.287, 1.255, 1.230, and 1.206, respectively). The seventh component's real eigenvalue (0.650) fell below its corresponding random threshold (1.182), confirming that six components should be retained. This result was consistent with the scree plot inflection point and the Kaiser eigenvalue-greater-than-one rule, providing convergent support for the six-component solution.

Table 7: Parallel analysis for component retention

Component	Observed Eigenvalue	Mean Random Eigenvalue	95th Percentile Random Eigenvalue	Decision
1	7.175	1.339	1.380	Retained
2	3.858	1.294	1.327	Retained
3	3.053	1.262	1.287	Retained
4	2.435	1.233	1.255	Retained
5	1.837	1.207	1.230	Retained
6	1.723	1.184	1.206	Retained
7	0.650	1.162	1.182	Not retained

Source: Estimated using primary data

4.1.6. Communalities

Communalities for all 31 items are presented in Table 8. Extraction communalities ranged from 0.545 (UEA3: Higher wages) to 0.742 (ECV2: Flood and cyclone occurrence), with a mean communality of 0.648. All values exceeded the recommended minimum threshold of 0.40 (Hair et al., 2010; Field, 2024), indicating that the retained six-component solution adequately represented all measured items. The highest communalities were observed for the Environmental and Climate Vulnerability items (ECV1-ECV3; $h^2 = 0.722$ -0.742) and the Social Networks and Migration Systems items (SNM1-SNM3; $h^2 = 0.662$ -0.718), suggesting that these constructs were particularly well represented by the extracted components.

Table 8: Communalities extraction

Principal Components	Original Item Code	Equivalent Thematic Codes after PCA	Motivations	Initial	Extraction
Economic Livelihood Distress (ELD)	X ₅	ELD1	Seasonal unemployment	1	0.631
	X ₃	ELD2	Rising agricultural input costs	1	0.624
	X ₆	ELD3	Irregular or low rural wages	1	0.680
	X ₄	ELD4	Small and fragmented landholdings or Landlessness	1	0.669
	X ₉	ELD5	Business failure	1	0.716
	X ₁	ELD6	Declining crop productivity	1	0.687
	X ₂	ELD7	Frequent crop failure	1	0.610
	X ₇	ELD8	Agricultural or business debt	1	0.579
	X ₈	ELD9	Lack of job opportunities	1	0.659
Demographic and Household Pressure (DHP)	X ₁₈	DHP1	Responsibility to support family income	1	0.664
	X ₁₃	DHP2	Large household size	1	0.610
	X ₁₅	DHP3	Education expenses	1	0.585
	X ₁₄	DHP4	High dependency ratio	1	0.651
	X ₁₇	DHP5	Marriage and social ceremony costs	1	0.598
	X ₁₆	DHP6	Healthcare expenditure	1	0.592
Aspirational and Social Mobility (ASM)	X ₂₆	ASM1	Desire for social status improvement	1	0.689
	X ₂₉	ASM2	Exposure to modern consumer goods	1	0.615
	X ₂₇	ASM3	Urban lifestyle attraction	1	0.650
	X ₃₀	ASM4	Personal autonomy	1	0.582
	X ₃₁	ASM5	Saving to start a business	1	0.621
	X ₂₈	ASM6	Better housing aspirations	1	0.699
Urban Employment and Wage Attraction (UEA)	X ₂₂	UEA1	Overtime earnings	1	0.633
	X ₁₉	UEA2	Availability of employment opportunities	1	0.578
	X ₂₀	UEA3	Higher wages	1	0.545
	X ₂₁	UEA4	Regular income	1	0.654
	X ₁₁	ECV1	Irregular rainfall and drought	1	0.738

Environmental and Climate Vulnerability (ECV)	X ₁₀	ECV2	Flood and cyclone occurrence	1	0.742
	X ₁₂	ECV3	Lack of irrigation water	1	0.722
Social Networks and Migration Systems (SNM)	X ₂₃	SNM1	Presence of relatives	1	0.718
	X ₂₄	SNM2	Friends and neighbours in cities	1	0.662
	X ₂₅	SNM3	Labour contractor influence	1	0.677

Source: Estimated using primary data

4.1.7. Component Interpretation

The rotated component matrix revealed six distinct dimensions underlying migration decisions, with clear and strong factor loadings enabling meaningful interpretation of each component as presented in Table 6. The results highlight that migration is influenced by a combination of economic distress, household pressures, aspirations, employment opportunities, environmental risks, and social networks.

Component 1 (Economic Livelihood Distress): The first component shows strong loadings on variables related to rural economic instability, including seasonal unemployment (0.837), rising agricultural input costs (0.817), irregular or low rural wages (0.813), small and fragmented landholdings (0.804), business failure (0.803), declining crop productivity (0.781), frequent crop failure (0.777), agricultural or business debt (0.768), and lack of job opportunities (0.743). These factors collectively reflect structural constraints in rural livelihoods that compel individuals to migrate. The dominance (23.14 percent variance) of this component indicates that migration is largely driven by economic distress and limited livelihood opportunities at the place of origin, reinforcing the classical “push factor” argument in migration theory.

Component 2 (Demographic and Household Pressure): The second component captures household-level pressures, with high loadings on responsibility to support family income (0.824), large household size (0.820), education expenses (0.796), high dependency ratio (0.778), marriage and social ceremony costs (0.766), and healthcare expenditure (0.753). This component highlights that migration decisions are not solely individual but are embedded within household responsibilities and socio-economic obligations. Family structure and expenditure burdens significantly influence migration as a coping strategy.

Component 3 (Aspirational and Social Mobility Drivers): The third component is defined by aspirational factors, including desire for social status improvement (0.791), exposure to modern consumer goods (0.783), urban lifestyle attraction (0.767), personal autonomy (0.759), saving to start a business (0.754), and better housing aspirations (0.745). This dimension indicates that migration is not purely distress-driven; rather, it is also motivated by aspirations for improved living standards, social mobility, and modern lifestyles. The relatively high variance explained suggests that aspirational motives play a significant role alongside economic necessity.

Component 4 (Urban Employment and Wage Attraction): This component includes availability of employment opportunities (0.779), higher wages (0.740), regular income (0.721), and overtime earnings (0.794). These variables represent the traditional “pull factors” that attract workers to urban areas. However, the comparatively lower variance explained suggests that while economic opportunities in destination areas are important, they are secondary to push factors and aspirations in shaping migration decisions.

Component 5 (Environmental and Climate Vulnerability): The fifth component captures environmental stressors, including irregular rainfall and drought (0.848), flood and cyclone occurrence (0.842), and lack of irrigation water (0.829). These findings highlight the growing

importance of climate variability and environmental risks as drivers of migration. Environmental shocks reduce agricultural productivity and increase livelihood uncertainty, thereby contributing to migration pressures.

Component 6 (Social Networks and Migration Systems): The sixth component consists of presence of relatives (0.835), friends and neighbours in cities (0.802), and labour contractor influence (0.801). This component underscores the role of social networks and intermediaries in facilitating migration. These networks reduce migration costs, provide information, and help migrants access employment opportunities. Although this component explains the smallest proportion of variance, it plays a critical role in enabling and sustaining migration flows.

The present study focused on identifying and interpreting the latent dimensions underlying migration motivations through principal component analysis. Accordingly, factor scores were not computed for subsequent analyses, as the objective was not to examine relationships with external outcome variables or demographic subgroup differences. Future studies may compute regression-based factor scores to compare migration motivation profiles across demographic groups, such as gender, occupational skill level, or migration experience.

4.1.8. Robustness Check

Sensitivity to Factor Retention Criterion

To evaluate the stability of the six-component solution, PCA with Varimax rotation was re-run specifying five and seven components respectively. The five-component solution produced a theoretically untenable merger of Social Network items (SNM1-SNM3; loadings = 0.531-0.586) with (UEA1-UEA4; loadings = 0.627-0.674) into a single composite factor, conflating conceptually distinct constructs of network facilitation and wage attraction (Manchin & Orazbayev, 2018; Reja & Das, 2019). The seven-component solution generated an uninterpretable near-singleton seventh factor driven by a single item, UEA3 (Regular income; loading = 0.771), with a weak cross-loading of 0.503 on the Urban Employment factor, indicating over factoring (Costello & Osborne, 2005; Hair et al., 2010). In contrast, the six-component solution demonstrated clean primary loadings across all 31 items (range = 0.721-0.848), no meaningful cross-loadings, and convergent support from parallel analysis, the scree plot, and the Kaiser criterion, confirming its structural superiority and robustness over both alternative solutions.

Split-Sample Validation

Further to assess the replicability of the six-component solution, the sample was randomly divided into two equal halves (Sub-sample 1: $n = 501$; Sub-sample 2: $n = 501$), and PCA with Varimax rotation was conducted independently on each sub-sample. In Sub-sample 1, six components were extracted with eigenvalues ranging from 7.21 to 1.69, collectively explaining 64.31 percent of the total variance. In Sub-sample 2, the six-component solution explained 65.61 percent of total variance, with eigenvalues ranging from 7.20 to 1.62. Across both sub-samples, the eigenvalue structure closely mirrored the full-sample solution (eigenvalues: 7.17-1.72; total variance explained: 64.78 percent), with no component emerging or disappearing and no meaningful shift in the proportion of variance explained by any individual component. The consistency of the six-component structure across both independent sub-samples confirms that the factor solution is stable, replicable, and not an artefact of the specific sample composition (Hair et al., 2010; Tabachnick & Fidell, 2019).

Polychoric Correlation

While polychoric correlations are theoretically preferable for ordinal Likert data, simulation evidence demonstrates that Pearson-based PCA with five-point scales, large samples ($N \geq 500$),

and strong loadings produce negligible bias (Norman, 2010; Tabachnick & Fidell, 2019), conditions all satisfied in the present study. To empirically verify this, a sensitivity analysis was conducted using polychoric correlations estimated in R (psych package; Revelle, 2026). The polychoric matrix yielded an identical six-component solution (eigenvalue > 1 criterion: 7.75, 4.06, 3.21, 2.55, 1.89, 1.79) as presented in Table 9, with all 31 items loading on their hypothesized components and no cross-loadings exceeding 0.30. Polychoric loadings were marginally higher than Pearson loadings (mean difference = +0.024) as presented in Table 10, reflecting the expected attenuation correction, with total variance explained of 68.6% versus 64.8% (Table 9). The six-component structure was fully invariant across both methods, confirming the robustness of the primary analysis.

Table 9: Eigenvalue and variance comparison

Component	Polychoric PCA Eigenvalue	Pearson PCA Eigenvalue	Polychoric PCA Cumulative Variance (%)	Pearson PCA Cumulative Variance (%)
ELD	7.75	7.17	24.99	18.81
DHP	4.06	3.86	38.08	31.25
ASM	3.21	3.05	48.45	43.21
UEA	2.55	2.44	56.69	51.02
ECV	1.89	1.84	62.80	58.08
SNM	1.79	1.72	68.56	64.78

Source: Estimated using primary data

Table 10: Component loading ranges comparison

Component	Items	Polychoric PCA Component	Polychoric Loading Range	Pearson PCA Component	Items	Pearson Loading Range
ELD	9 items	RC1	0.77-0.86	Component 1	9 items	0.74-0.84
DHP	6 items	RC2	0.78-0.84	Component 2	6 items	0.75-0.82
ASM	6 items	RC3	0.77-0.81	Component 3	6 items	0.74-0.79
UEA	4 items	RC4	0.74-0.81	Component 4	4 items	0.72-0.79
ECV	3 items	RC5	0.84-0.86	Component 5	3 items	0.83-0.85
SNM	3 items	RC6	0.82-0.85	Component 6	3 items	0.80-0.83

Source: Estimated using primary data

4.2. Discussion

The findings of this study highlight the multidimensional nature of internal labour migration to Bhubaneswar, particularly within the construction sector. The results indicate that migration is shaped by the combined influence of economic distress, household pressures, aspirations, environmental risks, and social networks rather than a single dominant factor.

The prominence of economic livelihood distress as the leading component underscores the continued relevance of structural constraints in rural areas (Thapaliya et al., 2023; Bellampalli & Yadava, 2024; Weldu et al., 2025). Factors such as declining agricultural productivity, irregular wages, indebtedness, and lack of employment opportunities suggest that migration remains largely a response to persistent rural vulnerabilities (Pingali et al., 2019; Bellampalli & Yadava, 2022; Madan & Dangi, 2023; Dash, 2023). This supports the classical push-pull framework, in which adverse conditions at the origin compel individuals to seek alternative livelihoods (Agrawal & Chandrasekhar, 2015). In the context of Odisha, where agrarian instability and underemployment are prevalent, migration functions as a critical survival strategy.

At the same time, the significance of demographic and household pressures reveals that migration decisions are embedded within family-level considerations (Simpson, 2022; Rahmat,

2024). Large household sizes, high dependency ratios, and increasing expenditures on education, healthcare, and social obligations create financial burdens that necessitate additional income sources. This aligns with the perspective that migration is often a household strategy aimed at income diversification and risk management rather than an individual choice alone.

An important insight from this study is the role of aspirational and social mobility factors (Eshetu & Beshir, 2017; Memon et al., 2025; Tesařová & Jeřábek, 2025). Variables such as the desire for improved social status, attraction to urban lifestyles, and aspirations for better housing indicate that migration is not solely driven by necessity but also by the pursuit of upward mobility (Bellampalli & Yadava, 2022; Deshingkar, 2023; Behera et al., 2024). This finding challenges traditional views that frame migration purely in terms of distress and highlights the growing importance of aspirations, exposure to modern consumption patterns, and the search for autonomy in shaping migration behaviour (Carling & Schewel, 2020; De Haas, 2021).

The component related to urban employment and wage attraction confirms the role of destination-based opportunities in influencing migration (Madan & Dangi, 2023). However, its relatively lower contribution suggests that migrants are more influenced by employment stability and regular income rather than higher wages alone (Imbert & Papp, 2020; Madan & Dangi, 2023). Bhubaneswar attracts workers due to the availability of continuous work opportunities and its proximity to rural source regions, making it suitable for short-term and circular migration, similar to the prior findings from the study by Agrawal & Chandrasekhar (2015).

The identification of environmental and climate-related factors further emphasizes the role of ecological stress in driving migration (Borderon et al., 2019; Niva et al., 2021; Tripathy, 2021; Szaboova et al., 2023; Ventrella & Cohen, 2023). Irregular rainfall, drought, and recurring floods disrupt agricultural activities and intensify livelihood insecurity, thereby contributing to migration pressures (Tripathy, 2021; Dash, 2023). This reflects the increasing importance of climate variability as a determinant of internal migration. Importantly, climate-induced migration is increasingly understood not merely as a response to ecological stress, but as a complex adaptive strategy involving significant trade-offs in well-being, equity, and sustainability for both migrants and their communities of origin (Szaboova et al., 2023).

Finally, social networks and intermediaries play a crucial role in facilitating migration (Manchin & Orazbayev, 2018; Reja & Das, 2019; Dash, 2023). The presence of relatives, friends, and labour contractors helps reduce uncertainty, lower migration costs, and provide access to employment opportunities (Pingali et al., 2019; Imbert & Papp, 2020; Patra, 2025; Sarma & Nath, 2025). However, reliance on such networks also reflects the informal nature of the construction labour market.

Thus, the study demonstrates that migration to Bhubaneswar is driven by a complex interplay of compulsion and aspiration, highlighting the need for integrated policy approaches addressing both rural distress and urban labour conditions.

5. Conclusion

This study examined the determinants of internal labour migration among construction workers in Bhubaneswar and identified distinct migration decision profiles using a mixed-method approach integrating qualitative exploration and Principal Component Analysis (PCA). The findings provide important insights into the multidimensional nature of migration motivations.

The PCA results revealed that migration is influenced by six major dimensions: Economic Livelihood Distress, Demographic and Household Pressure, Aspirational and Social Mobility

Drivers, Urban Employment and Wage Attraction, Environmental and Climate Vulnerability, and Social Networks and Migration Systems. Together, these six dimensions explained nearly 65 percent of the total variance, indicating that migration decisions cannot be attributed to a single dominant factor but instead emerge from the interaction of economic, environmental, social, and aspirational forces. While economic livelihood distress accounted for the largest share of variance, non-economic factors, including aspirations, household pressures, environmental vulnerability, and social networks, collectively played a more substantial role in shaping migration decisions. These findings challenge traditional migration theories that emphasise wage differentials alone and highlight the importance of broader structural and social determinants.

Importantly, the findings highlight the emerging role of environmental and climate vulnerability as a distinct migration driver. Workers affected by floods, drought, and irrigation scarcity formed a separate migration profile, underscoring the growing link between climate change and internal labour mobility. Similarly, the role of social networks in facilitating migration underscores the importance of informal institutional structures in reducing migration costs and enabling labour mobility in the absence of formal employment mechanisms.

These findings have important theoretical and policy implications. The results support multidimensional migration frameworks, including push-pull theory, the new economics of labour migration, and social network theory, by demonstrating that migration decisions are shaped by a combination of distress, opportunity, household strategy, and social facilitation. From a policy perspective, the heterogeneity of migration motivations suggests that uniform interventions may be insufficient. In the context of Odisha, strengthening the portability of social protection benefits for migrant workers, including access to food security, healthcare, and welfare entitlements across districts, remains particularly important. The findings also highlight the need for stronger regulation and monitoring of labour contractors and intermediaries within the construction sector to reduce worker vulnerability and improve accountability. At the urban destination level, improving temporary worker housing, sanitation, occupational safety and health (OSH) standards, and wage security mechanisms would contribute significantly to migrant wellbeing and labour protection. Simultaneously, the prominence of environmental and climate-related migration drivers underscores the importance of climate-resilient rural livelihood programs, irrigation support, and employment diversification initiatives in migration source districts. Together, these interventions may help reduce distress-driven migration while improving the conditions under which migration occurs.

Overall, this study contributes to the literature by providing empirical evidence on the multidimensional drivers of construction worker migration in an emerging urban destination. It highlights that migration to Bhubaneswar is shaped not only by economic necessity but also by aspirations, social networks, and environmental pressures. Recognizing this diversity is essential for designing inclusive labour, urban, and rural development policies that address both the vulnerabilities and opportunities associated with internal labour migration.

6. Limitations and Future Research Directions

This study has certain limitations. First, the research is limited to construction workers in Bhubaneswar, and the findings may not be fully generalizable to other regions or occupational sectors. Second, the cross-sectional design captures migration motivations at a single point in time and does not reflect changes over time. Third, the study relies on self-reported perceptions, which may be influenced by recall or subjective bias. Fourth, the analysis did not incorporate other important control variables such as age, education, income level, land ownership, or migration history, which may also influence migration decisions. Fifth, the purposive and convenience-based site sampling approach limits statistical generalizability and may introduce

selection-related biases. Access to construction sites partly depended on informal permissions from contractors or site supervisors, which may have influenced worker accessibility and participation. Consequently, workers employed at highly restricted, smaller, peripheral, or less accessible sites may be underrepresented in the sample. In addition, the possibility of self-selection bias cannot be entirely ruled out, as participation depended on workers' willingness and availability during field interactions. Finally, the study focuses on migration motivations but does not examine post-migration livelihood outcomes.

Future research should incorporate broader socio-economic and demographic variables to better explain migration behavior. Comparative and longitudinal studies across different regions and sectors would provide deeper insights into migration dynamics. Further research should also examine the roles of climate change, gender, and labour market institutions, as well as assess the long-term socio-economic impacts of migration across different migrant groups.

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Appendix A. Migration Motivation Questionnaire Items

Code	Survey Item
X ₁	I migrated because declining crop productivity reduced livelihood opportunities in my place of origin.
X ₂	I migrated because frequent crop failures made it difficult to sustain my household income.
X ₃	I migrated because rising agricultural input costs made farming economically unviable.
X ₄	I migrated because small and fragmented landholdings (or lack of land) limited my earning opportunities.
X ₅	I migrated because seasonal unemployment reduced the availability of work in my village.
X ₆	I migrated because rural wages were too low or irregular to support my livelihood needs.
X ₇	I migrated because agricultural or business-related debts created financial pressure on my household.
X ₈	I migrated because there were insufficient employment opportunities in my local area.
X ₉	I migrated because failure of a business or self-employment activity reduced my income opportunities.
X ₁₀	I migrated because floods or cyclones negatively affected my livelihood.
X ₁₁	I migrated because irregular rainfall or drought conditions affected my livelihood security.
X ₁₂	I migrated because inadequate irrigation water limited agricultural production and income generation.
X ₁₃	I migrated because my household size created greater financial responsibilities.
X ₁₄	I migrated because a high number of dependent family members increased household financial pressure.
X ₁₅	I migrated because educational expenses of children or family members required additional income.
X ₁₆	I migrated because healthcare expenses placed financial strain on my household.
X ₁₇	I migrated because marriage-related or social ceremony expenses required additional financial resources.
X ₁₈	I migrated because I felt responsible for supporting my family's income.
X ₁₉	I migrated because employment opportunities were more readily available in Bhubaneswar.
X ₂₀	I migrated because wages in Bhubaneswar were higher than those available in my place of origin.
X ₂₁	I migrated because Bhubaneswar offered opportunities for more regular and stable income.
X ₂₂	I migrated because I could earn additional income through overtime work in Bhubaneswar.

X ₂₃	I migrated because relatives already living or working in Bhubaneswar encouraged or supported my migration.
X ₂₄	I migrated because friends or neighbours in the city provided information or assistance for migration.
X ₂₅	I migrated because labour contractors helped arrange employment opportunities in Bhubaneswar.
X ₂₆	I migrated because I wanted to improve my social status and standing in society.
X ₂₇	I migrated because I was attracted to the lifestyle and opportunities available in urban areas.
X ₂₈	I migrated because I aspired to own a better house.
X ₂₉	I migrated because I wanted greater access to modern consumer goods and amenities.
X ₃₀	I migrated because migration offered greater personal freedom and independence.
X ₃₁	I migrated because I wanted to save money to start my own business in the future.