

Demography India

A Journal of Indian Association of Study of Population

Journal Homepage: <https://demographyindia.iasp.ac.in/>



Drivers and Dynamics of Seasonal Labor Migration in West Bengal: Evidence from NSS 64th Round Data

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Abstract

Seasonal migration in West Bengal was influenced by a complex interplay of demographic, socio-economic, and cultural factors. This study investigated seasonal migration patterns in West Bengal, India, using data from the NSSO 64th round (2007-08). Seasonal migration had served as a crucial livelihood strategy for impoverished households, driven by the need for additional income. The research aimed to identify the determinants and socio-economic characteristics of seasonal migrants in West Bengal through logistic regression analysis. The analysis highlighted that West Bengal exhibited a higher propensity for inter-district and inter-state urban-to-urban seasonal migration. Districts such as Darjeeling, Birbhum, Bardhaman, Bankura, and Purulia experienced high intra-state migration, suggesting a preference for within-state seasonal movements, while districts like Jalpaiguri, North Dinajpur, South Dinajpur, Malda, and Kolkata showed high rates of inter-state migration. Regression results indicated that younger individuals, males, rural residents, married persons, and those from socio-economically deprived communities, such as Scheduled Castes and Scheduled Tribes, were more likely to migrate seasonally. Education levels, household size, landholding, and economic status significantly influenced migration decisions. Specifically, individuals with lower economic status and smaller landholdings were more prone to migrate due to limited local opportunities. The study also revealed that higher education correlated with higher migration rates, possibly due to better access to information and employment networks. The analysis showed that men were significantly more likely to migrate than women, reflecting traditional gender roles and economic responsibilities. Married individuals, especially those with larger households, were more inclined to migrate to support their families financially.

Keywords

Determinants,
India, Seasonal
Migration,
Socio-
Economic
Characteristics,
Spatial
Patterns, West
Bengal

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Introduction

Migration had been a crucial component of population change, directly influencing the size, composition, and distribution of populations in specific regions or countries. It involved the process by which individuals relocated, changing their habitual place of residence. It had played an important role in the advancement of humanity, increasing wealth for all, and reducing poverty. Both the countries of origin and destination could benefit from effectively managing the root causes and consequences of migration (The World Bank, 2023).

The dynamics of seasonal migration in West Bengal, India, provide a compelling case study that resonates with broader global patterns of migration, particularly in developing countries. The Harries-Todaro model's focus on income disparities is a global concept, pertinent to many developing and underdeveloped countries where rural inhabitants migrate to urban areas in search of better economic prospects. Countries like sub-Saharan Africa and Southeast Asia portray similar levels and patterns, where economic inequality between rural and urban sectors drives individuals to look for better livelihood status in towns or cities (Harris-Todaro, 1970). According to Myrdal's theory of cumulative causation, economic growth tends to concentrate in specific regions, reinforcing regional inequalities. Theory highlights the cyclical nature of development and migration, a phenomenon universal in several developing regions. In the case of West Bengal, this manifests as rural out-migration from economically disadvantaged districts, which seek better opportunities in relatively prosperous

urban centres (Myrdal, 1957). The Core-Periphery models illustrate the concentration of economic activity in urban areas, leaving outer-peripheral areas underdeveloped, such as metropolitan cities of Africa and Asia (Friedmann, 1966; Krugman, 1991). The New Economic Geography highlights how economic activities cluster in specific regions, creating agglomeration effects. This is evident in different countries like Mexico, where the city of Mexico attracts rural labour for better opportunities, mirroring the trends found in the state of West Bengal (Krugman, 1991). The foundational principles of push and pull factors are universally applicable. The higher wages in the Middle East for South Asian workers or the migration stream from rural to urban areas in the Philippines explain why individuals leave their origin birth places for better livelihoods, which helps analyze migration trends globally (Ravenstein, 1885). Similarly, Piore's dual labour market theory demands low-wage labour in secondary labour markets. Various developing countries faced similar reliance on informal labour sectors, where migrants often find themselves in insecure employment situations, lacking stability, an actual reality faced by migrant workers in urban places from Vietnam to Nigeria (Piore, 1979).

The urban-rural divide in India underscores the disparity in access to infrastructure and employment opportunities. Seasonal migrants from rural West Bengal, moving to urban centres, are typically engaged in informal labour, reflecting the broader regional development imbalances (Bhagat, 2010). In West Bengal, high levels of deprivation and limited access to basic services in rural areas drive seasonal migration to urban centres where economic

opportunities are perceived to be better (Kanbur & Venables, 2005). The impact of agricultural cycles on migration patterns is a significant aspect of rural development theories. Seasonal migration in West Bengal often correlates with the agricultural calendar, where workers migrate to urban areas during non-planting seasons to supplement their income (Lipton, 1980).

Seasonal migration had been a common livelihood strategy for poor households as a means of supplementing their income through remittances. In recent years, there has been an increase in seasonal migration, with males typically choosing manual labour and women working as housemaids and head loaders. Over 10 million internal labour migrants were expected to be in India, including approximately 6 million intra-state migrants and 4.5 million inter-state migrants (National Commission on Rural Labour, 1991). The National Sample Survey Office of India (2007-2008) had estimated approximately 326 million internal migrants, which amounted to 28.5 percent of the population. A study had shown that the highest seasonal migration rate was found in the state of Bihar (20,85,600), followed by Uttar Pradesh (18,96,500), West Bengal (15,28,400), and Madhya Pradesh (12,36,900) (Keshri & Bhagat, 2012). Nearly 83% of the seasonal migrants identified in the National Sample Surveys had come from officially defined socioeconomically deprived communities in India (Srivastava, 2019). Seasonal migration had historically served as an important means of income for the underprivileged in India (Deshingkar & Start, 2003). Despite the lack of extensive panel data on the subject, seasonal migration for employment has been increasing in India. This trend was evident from an increasing number of

micro-studies showing growth in seasonal migration both in absolute terms and relative to the size of the working population overall (Rogaly et al., 2002; Shah, 2006; Deshingkar et al., 2008; Mishra, 2020). The NSSO had used surveys on employment and unemployment, migration, and household consumption expenditure to gather information on migration. However, due to methodological constraints or difficulties in tracking transient or circular migration patterns, these surveys might not have focused explicitly on seasonal movement or captured it in sufficient depth. Although the census had included every person in the country, it did not include data on temporary and short-term migration (Bhagat & Mohanty, 2009; Kundu, 2009). Conversely, the National Sample Survey (NSS) had gathered data on short-term and transitory migration related to work but did not cover the entire population, and data were not available at the village or block level. Remittances and migration had supported those attempting to assemble sufficient and improved livelihoods by lowering vulnerability and poverty.

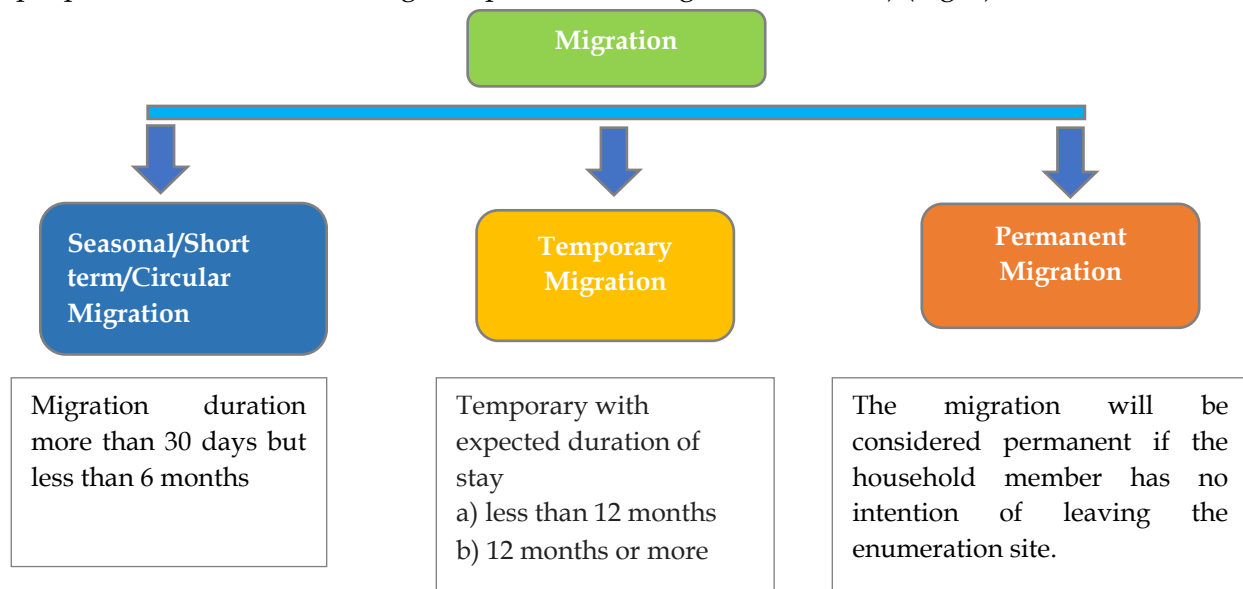
By situating the seasonal migration patterns of West Bengal within this broader theoretical structure, this paper not only highlights the regional dynamics but also engages with global conversations about migration. The challenges faced by seasonal migrants in West Bengal mirror a microcosm of subjects encountered in various developing countries, making the findings relevant to policymakers, researchers, and practitioners worldwide. Understanding these dynamics is crucial for crafting efficient migration policies and addressing the root causes of regional

inequality, thereby promoting sustainable development across diverse perspectives.

A seasonal migrant had been a subgroup of temporary migrants (Plewa, 2013). De Brauw (2007) defined seasonal migrants as individuals who were still regarded as members of the household even when they left for work for a portion of the year (De Brauw, 2007). Seasonal migration was defined as having a duration shorter than a year, and migrant workers were not allowed to stay longer than a specified period of time (Stark et al., 2006). Oshiro had defined seasonal migration as “all people who leave their village or place of

residence to work for a period longer than one month but shorter than a year with the intention of returning after the work term is over” (Oshiro, 1984). A person who left their place of residence for up to six months a year was said to engage in seasonal migration (Keshri & Bhagat, 2013).

The phrase "short-term migrants" had first been used by the NSSO in its 64th Round Survey and was defined as those who left their home village or town for job purposes during the previous 365 days for a duration of one month or longer but less than six months (National Sample Survey Organisation, 2009) (Fig. 1).



Spell: A continuous period of staying away for 15 days or more from the village/ town is termed as a spell.

Source: Author's own calculation based on NSS data 2007-08.

Figure 1 Classification of migration according to National Sample Survey, 64th Round, Schedule 10, 2007-08

Research Overview

Migration as an outcome of poverty and poverty as the main trigger of migration might have appeared similar, yet they differed greatly. The focus had shifted to the problem of feeling poor as a result of migration, which was relative rather than

absolute deprivation. People migrated to survive because there were no prospects available to them locally. Migration was generally perceived as a simple flight from poverty (Skeldon, 2003; Kothari, 2002; Deshingkar, 2006; Siddiqui, 2012). About half (49 to 51%) of the world's chronic poor and slightly more than half (55%) of the

world's extreme poor were found in India and China. India had a higher percentage of the world's chronic poverty than China's extreme poverty due to the higher probability of remaining poor in India (McKay et al., 2004).

The movement of surplus labour from rural areas to areas with job prospects during a particular season was termed seasonal migration, and the number of yearly flows was determined by the need for labour in destination areas. However, flows usually decreased when economic opportunities improved in the migrants' place of origin. Seasonal migration was the short-term movement of labour or families in response to economic, climatic, and social shocks; examples of seasonal hardships included food shortages or low income during specific months of the year when local markets did not provide opportunities for earning a living. Seasonal migration had been more crucial for farmers in countries where single crops were grown (Oshiro, 1984). Brauw and Harigaya (2007) showed how the rising living standards in rural Vietnam could be attributed in large part to seasonal migration. Seasonal migration was low in communities where access to microcredit was available, but was significant for households with a high dependency ratio, high reliance on wage work, and high unemployment rates (Khandker, Khalily, & Samad, 2012).

West Bengal was the eighth most populous country division in the world, the fourth most populous state in India, and the thirteenth largest state by area, with about 68.13% of people living in villages (Government of India, 2011). Kolkata had been a migration hub for Indians from all over the country since the early days of

colonization. As a result of the industrialization and urbanization processes that began in the early nineteenth century, economic migration had been a notable phenomenon affecting both the impoverished residents of the surrounding states and the districts themselves in Bengal (Ghosh, 2010). Undocumented immigrants made up a sizable component of West Bengal's informal labor market, but the lack of precise data made it difficult to pinpoint their actual numbers or percentages. According to Jharkhand News (2008), the districts of Gumla and Palamau in Jharkhand were the primary sources of seasonal migrants employed in road building and brickfields in West Bengal. Ben Rogaly et al. (2001) documented the intra-district circularity of agricultural labor in West Bengal in the recent past, primarily due to debt. Their analysis effectively illustrated the characteristics of seasonal movement that enabled employers in agriculturally advanced districts to accumulate surplus production.

Two effects of inequality included the patterns of in-migration during periods of peak demand from the less developed districts of Purulia and Murshidabad to the highly productive green revolution area of Bardhaman. The more organized group of Purulia's out-migrants had also taken up the practice of removing migrants from the labour field to pressure employers to alter contract terms in favour of workers, as mentioned in their report. Rice production was the main agricultural activity in a large portion of the state south of the Ganges, with labour demand peaking seasonally. Many wage workers from Purulia District's eastern blocks had gone on a seasonal basis to work in brick kilns and rice cultivation in West Bengal's plains. The cultivation of rice

was comparable in several respects in West Bengal's source and destination regions, centered in the Bardhaman District (De Haan & Rogaly, 1994; Rogaly et al., 2001; Rogaly & Coppard, 2003). The common understanding of seasonal temporary labour migration in India was that it arose from acute poverty, forcing villages to migrate during the dry six months to either survive or subsist (Shah, 2006). Deshingkar (2010) stated that migration rates differed between castes and villages; those who were impoverished on a long-term basis and resided in isolated areas tended to migrate at higher rates. Landless, marginal, and small-scale farmers who fell under the classifications of backward caste (BC), scheduled caste (SC), and scheduled tribe (ST), and who were primarily illiterate or had only completed primary education, derived a larger percentage of household income from profits from circular migration (Deshingkar, 2010). West Bengal had significant regional disparities as a result of uneven development, which had encouraged migration (Paul, 2019; Banerjee & Das, 2021). This paper aimed to study seasonal migration scenarios and associated factors in West Bengal based on NSSO (2007-08) data.

The Characteristics of Seasonal Migration

Seasonal migration had indeed been influenced by various factors, including age, sex, marital status, educational attainment, and caste (Haan & Haan, 2000; Hossain, 2001; Deshingkar, 2006; Rao, 2009; Deshingkar, 2010; Massey et al., 2010; Sunam & McCarthy, 2016). Younger people had migrated more than older ones because they could work harder (Khandker, Khalily, & Samad, 2012). Stark and Bloom (1985) argued in the new economics of labour migration that compelling empirical

evidence implied that younger workers exhibited greater mobility than older ones. This conclusion made sense regarding the differing possibilities and interests of younger and older workers (Stark & Bloom, 1985; Plane, 1992). Studies have shown that men were indeed more likely to migrate than women, a trend consistent historically and across various regions (Hondagneu-Sotelo & Cranford, 2006; Gubhaju & Jong, 2009; Keshri & Bhagat, 2010). The neoclassical microeconomic theory of migration decision-making held that migration was a personal decision made by a rational actor driven to relocate to maximize gains (Todaro, 1976; Massey et al., 1999). Gubhaju and Jong (2009) stated that compared to married males, individual men were 58% less likely to plan to migrate in the next year and 49% less likely to do so in the next five years, with married men having significantly higher probabilities. The reduction of household risk appeared to be a crucial factor in migration decisions (Long, 1992; Gubhaju & Jong, 2009). The most and least educated had significant migration rates. Seasonal labor mobility seemed to be dominated by illiterates, unlike in East and Southeast Asia (Haberfeld et al., 1999; Rogaly et al., 2001; Deshingkar, 2010; Keshri & Bhagat, 2010). Caste played a major role in determining migration by affecting who migrated, where they went, and what kind of experiences they had. Studies showed that Scheduled Tribes had a higher likelihood of migrating compared to the upper castes by many times. Scheduled Castes had a slightly higher likelihood of migrating than Other Castes, around five and a half times, followed closely by Backward Castes, who had a higher likelihood of migrating by four to four and a half times (Deshingkar & Start, 2003; Deshingkar & Akter, 2009). The

scarcity of land had been the primary cause of seasonal migration, where a low land-to-man ratio played a significant role in the decision of rural laborers to relocate. Small landholders and landless individuals had been more prone to migrate due to economic necessity, while large landholders might have migrated for educational and investment opportunities (Adams Jr, 1993; Bhandari, 2004; Jayachandran, 2006). The incidence of migration had been higher among lower MPCE groups due to economic necessity, lack of local opportunities, and the need for income diversification (Keshri & Bhagat, 2012; Mahapatro & James, 2015). Decision-making power within households had significantly influenced migration patterns, shaping who migrated, why they migrated, and their experiences before, during, and after migration.

Data and Methodology

This study utilized unit-level data from the 64th round of the National Sample Survey Organisation (NSSO). Conducted between July 1st, 2007, and June 30th, 2008, this round specifically focused on "Employment, Unemployment, and Migration Particulars." The survey employed the employment-unemployment schedule (schedule 10.2) to gather comprehensive data on various facets of employment, unemployment, and migration patterns in India. The 64th round of NSSO fieldwork was divided into four sub-rounds, each lasting three months. These sub-rounds spanned July to September 2007, October to December 2007, January to March 2008, and April to June 2008. To the greatest extent possible, a fixed number of sample villages/blocks (FSUs) were designated for survey in each sub-

round. A stratified multi-stage design governed the 64th round survey. Across all of India, a total of 12,688 FSUs was chosen for investigation, with 7,984 villages and 4,704 urban blocks represented. The entire sample size was allocated proportionally among states and union territories (UTs) based on the 2001 census data, ensuring a minimum sample size requirement for each. The survey ultimately covered 125,578 households—79,091 in rural areas and 46,487 in urban areas. This translates to a total of 374,294 respondents in the rural sector and 197,960 in the urban sector. In the specific case of West Bengal, 8,770 households were selected for the survey, resulting in 37,220 individuals being surveyed.

It's important to note that while relocation typically involves a change in one's usual place of residence (UPR), there exists another category of individuals who migrate temporarily without altering their UPR. The 64th round of the National Statistics System specifically collected data on the short-term movements of the population. This data included individuals who left their village or town for work or employment purposes for a period between one and six months within the preceding year. To gain insights into the factors influencing seasonal migration, this study employed binary logistic regression analysis using data from the NSSO 64th round. The dependent variable in this analysis was migration status (coded as 1 for seasonal migrants and 0 for non-migrants). The independent variables included factors such as age, sex, sector of residence (urban/rural), marital status, educational attainment, caste, religion, household size, landholding size, and Monthly Per Capita Expenditure (MPCE).

Empirical Results

Table 1 Percentage distribution of seasonal migration in India, 2007-08

State	Total
Andaman & Nicobar	0.44
Andhra Pradesh	1.05
Arunachal Pradesh	1.76
Assam	1.18
Bihar	2.82
Chhattisgarh	1.43
Dadra & Nagar Haveli	0.03
Daman & Diu	0.93
Delhi	0.4
Goa	0.57
Gujarat	2.32
Haryana	0.33
Himachal Pradesh	0.47
Jammu & Kashmir	1.28
Jharkhand	2.19
Karnataka	0.89
Kerala	0.44
Lakshadweep	0.28
Madhya Pradesh	2.09
Maharashtra	0.77
Manipur	0.43
Meghalaya	1.11
Mizoram	0.5
Nagaland	3.4
Orissa	1.2
Pondicherry	0.62
Punjab	0.54
Rajasthan	1.27
Sikkim	0.33
Tamil Nadu	0.94
Tripura	0.37
Uttar Pradesh	1.16
Uttaranchal	0.36
West Bengal	2
INDIA	1.35

Source: Author's own calculation based on NSS data 2007-08. Sample size (N): 572,254

Table 1 presents a comparative overview of seasonal migration patterns across Indian states and union territories, expressed as a proportion of the respective regional

populations. The data reveal that states such as Nagaland (3.40%), Bihar (2.82%), Jharkhand (2.19%), and Gujarat (2.32%) exhibit elevated levels of seasonal

migration, likely driven by a combination of economic distress, agrarian seasonality, and the pursuit of employment in more prosperous regions. A cluster of states—including West Bengal (2.00%), Madhya Pradesh (2.09%), Arunachal Pradesh (1.76%), and Chhattisgarh (1.43%)—falls within the moderate range, reflecting a mix of localized vulnerabilities and partial dependence on external labour markets. In contrast, regions such as Haryana (0.33%), Delhi (0.40%), Kerala (0.44%), and Goa

Table 2 Seasonal migration stream, 2007-08.

(0.57%) demonstrate comparatively low rates of seasonal migration, suggestive of relatively stable local economies, broader employment availability, or a reduced reliance on migratory labour. Among union territories, Daman & Diu (0.93%) and Dadra & Nagar Haveli (0.03%) present notable anomalies, with the latter's exceptionally low migration rate likely reflective of its limited population base or unique socio-economic configuration.

Seasonal Migration in Percent			
Distance Migration	Stream	India	West Bengal
Intra District	Rural-Rural	9.94	7.62
	Rural-Urban	13.36	3.97
	Urban-Rural	8.59	3.28
	Urban-Urban	13.81	6.04
Inter District	Rural-Rural	13.56	17.36
	Rural-Urban	21.72	27.41
	Urban-Rural	6.45	11.19
	Urban-Urban	30.13	40.59
Inter State	Rural-Rural	8.84	7.29
	Rural-Urban	36.81	35.92
	Urban-Rural	7.10	2.51
	Urban-Urban	25.12	35.83

Source: Author's own calculation based on NSS data 2007-08. Sample size (N): India & West Bengal- 572,254 & 37,220

Table 2 delineates a nuanced portrait of seasonal migration patterns in West Bengal, revealing distinct deviations from national trends. Intra-district migration—particularly across rural-urban divides—is markedly less prevalent in West Bengal compared to the national average, suggesting a limited scope of localized mobility within districts. Conversely, inter-district migration dominates across all streams, with notably higher shares in rural-to-rural and urban-to-urban flows, underscoring a broader spatial dispersal of labour migration within the state. When examined through the lens of inter-state migration, rural-to-urban flows in West Bengal align closely with national patterns, reflecting widespread economic motivations driving individuals toward

urban labour markets. However, urban-to-rural inter-state migration remains significantly underrepresented, indicating a weak pull factor in rural destinations across state borders. Strikingly, urban-to-urban inter-state migration in West Bengal far exceeds the national average, pointing to a robust circulation of migrants between urban centres, both within and outside the state.

Table 3 reveals a striking mosaic of seasonal migration patterns across West Bengal, laying bare the deep-rooted economic asymmetries between districts. At the forefront, Malda emerges as the most migration-prone district, with 6.54% of its population engaging in seasonal mobility—an unmistakable indicator of limited

livelihood options and systemic underemployment. Purulia follows closely at 6.03%, reinforcing its status as a region grappling with chronic economic vulnerability.

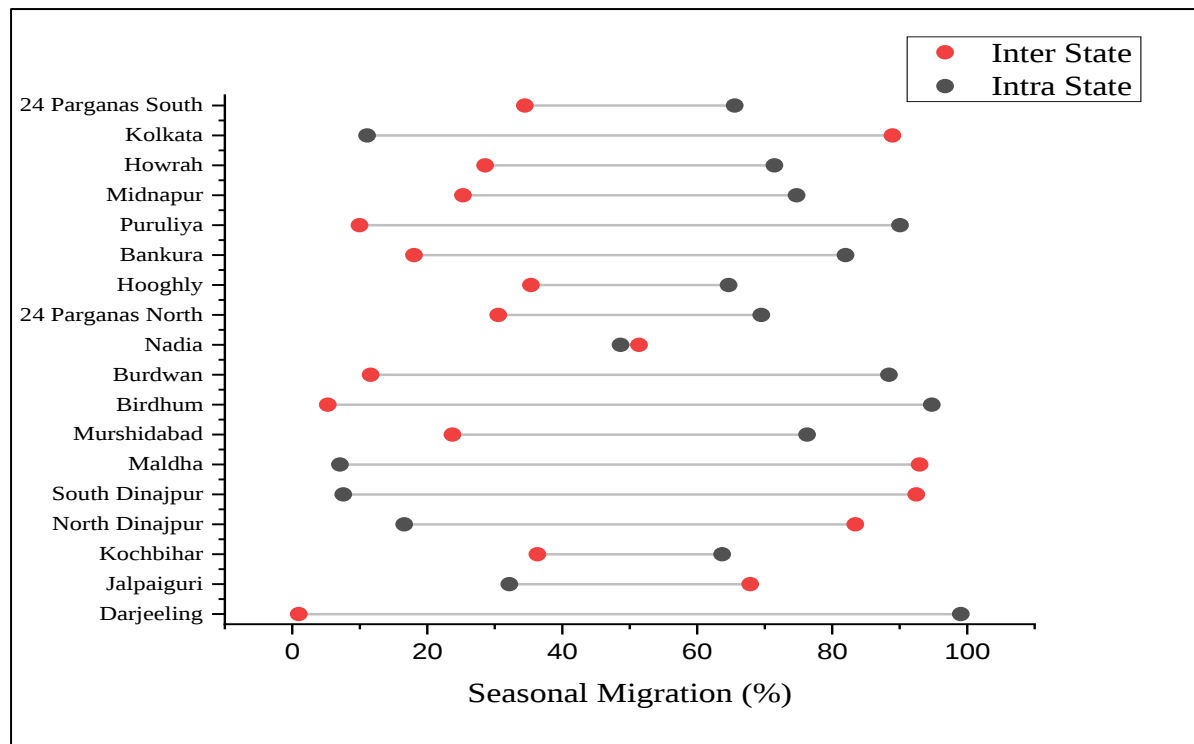
Districts such as Murshidabad (4.74%), South Dinajpur (3.75%), North Dinajpur (3.58%), and Birbhum (3.04%) similarly reflect elevated migratory pressures, suggesting that seasonal migration has become an embedded coping mechanism in these regions, shaped by stagnant rural economies and weak job markets. In contrast, a second tier of districts—including Nadia (1.68%), Midnapur (1.72%), Darjeeling (1.30%), Koch Bihar (1.28%),

Jalpaiguri (1.12%), Bankura (1.09%), and South 24 Parganas (1.54%)—displays moderate levels of out-migration, where economic conditions, while not dire, remain insufficiently robust to anchor all segments of the working-age population. At the other end of the spectrum, Bardhaman (0.31%), Howrah (0.26%), Hooghly (0.53%), and Kolkata (0.53%) represent the migration-resistant core of the state—urban-industrial hubs with diversified economies and stronger employment ecosystems. Even within relatively stable regions such as North 24 Parganas (1.18%), the persistence of seasonal migration points to micro-level disparities and the coexistence of prosperity with precarity.

Table 3 Percentage distribution of seasonal migration of all districts of West Bengal.

District	Seasonal Migration (%)
Bankura	1.09
Birbhum	3.04
Bardhaman	0.31
Darjeeling	1.3
Hooghly	0.53
Howrah	0.26
Jalpaiguri	1.12
Koch Bihar	1.28
Kolkata	0.53
Malda	6.54
Midnapur	1.72
Murshidabad	4.74
Nadia	1.68
North 24 Parganas	1.18
North Dinajpur	3.58
Purulia	6.03
South 24 Parganas	1.54
South Dinajpur	3.75
West Bengal	2

Source: Author's own calculation based on NSS data 2007-08. Sample size (N): 37,220



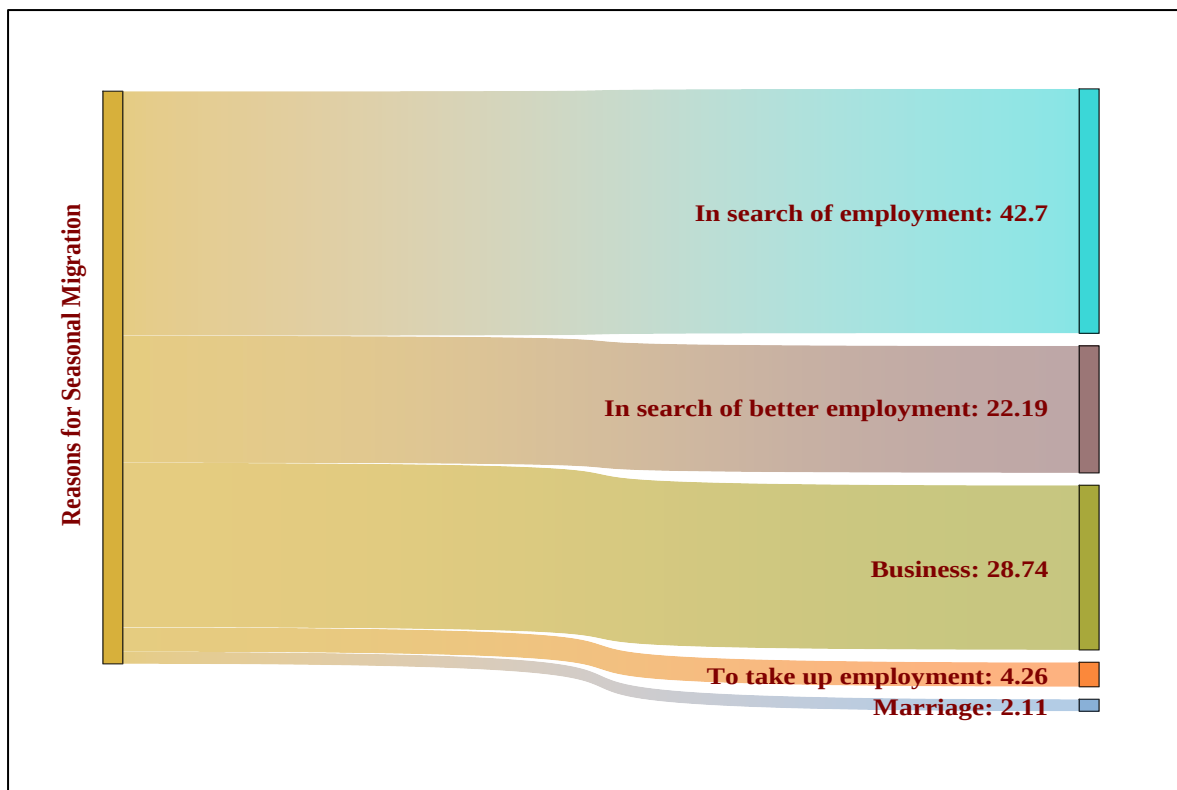
Source: Author's own calculation based on NSS data 2007-08.

Figure 2 Intra and Interstate Seasonal Migration in West Bengal, 2007-08

Fig. 2 reveals distinct spatial patterns in the direction of seasonal migration across districts in West Bengal, underscoring both intra-state and inter-state mobility dynamics. Districts such as Darjeeling, Birbhum, Bardhaman, Bankura, and Purulia exhibited predominantly high levels of intra-state migration, indicating a strong tendency among seasonal migrants in these regions to relocate within state boundaries. In contrast, districts including Murshidabad, Midnapur, Howrah, and both North and South 24 Parganas reflected dual migration flows, with a substantial number of individuals migrating both within and outside the state. Meanwhile, Jalpaiguri, North Dinajpur, South Dinajpur, Malda, and Kolkata reported high levels of inter-state migration, pointing to a marked preference for seeking employment opportunities beyond state borders. Notably, Nadia exhibited an almost equal

distribution between intra-state and inter-state migration, highlighting a transitional migration pattern that straddles both local and long-distance mobility.

Fig. 3 elucidates the multifaceted motivations underlying seasonal migration, with employment-related factors overwhelmingly dominating the landscape. The most prevalent driver was the search for employment, accounting for 42.7% of all cases. This substantial proportion underscores the chronic paucity of gainful employment in the migrants' regions of origin, compelling individuals to relocate temporarily in pursuit of subsistence. The prominence of this factor reflects enduring structural deficiencies in rural labour markets, where underemployment and agricultural seasonality offer limited economic security.



Source: Author's own calculation based on NSS data 2007-08.

Figure 3 Reasons for Seasonal Migration in Percentage of West Bengal, 2007-08

In addition, 22.19% of migrants reported relocating in search of better employment opportunities, suggesting that while some form of work may have been available locally, it was likely characterized by poor remuneration, instability, or a mismatch with the workers' skills and aspirations. This further illustrates the inadequacy of local labour markets in providing meaningful or sustainable livelihoods, particularly for those with aspirations for upward mobility or greater income security. A notable 28.74% of individuals migrated for business-related purposes, indicating a significant segment engaged in entrepreneurial activities or informal trade that necessitated temporary mobility. This trend points to a more diverse economic rationale for migration, where mobility is

not solely driven by wage labour but also by attempts to capitalize on market opportunities elsewhere. Such migrants may engage in seasonal commerce, agricultural trading, or operate micro-enterprises in regions with higher demand. Only 4.26% of migrants relocated to accept a specific job offer, suggesting that a minority had secured employment prior to migration. This reflects the largely informal and speculative nature of seasonal migration, where pre-arranged employment remains the exception rather than the norm. The small proportion of marriage-related migration (2.11%) further reinforces the conclusion that seasonal migration in this context is overwhelmingly economic in nature, rather than driven by social or familial imperatives.

Table 4 Background characteristics of seasonal migration of West Bengal (2007-08)

Variables	Percentage
Age Group	
0-14	2.44
15-64	97.39
65+	0.18
Sex	
Male	91.28
Female	8.72
Sector	
Rural	93.53
Urban	6.47
Marital Status	
Never Married	33.59
Currently Married	65.12
Widowed	1.12
Divorced/Separated	0.18
Educational Status	
Illiterate	32.99
Below Primary	19.26
Primary	27.35
Upper Primary	14.18
Secondary	3.23
Higher Secondary and Above	2.99
Social Group	
ST	12.16
SC	24.06
OBC	5.48
Others	58.3
Religion	
Hindu	53.39
Islam	43.22
Household Size	
1 to 4	35.5
2 to 8	54.25
9 and above	10.25
Land Holding	
Below 1.00 hectares	96.88
1.01 - 2.00 hectares	2.72
Above 2.00 hectares	0.4
MPCE	
Lowest	12.56
Lower	52.37
Medium	24.74
Higher	7.25
Highest	3.08

Note: "MPCE" stands for "Monthly Per Capita Expenditure," which represents the average expenditure per person per month within a particular population or household. Sample size (N): 37,220

Source: Author's own calculation based on NSS data 2007-08.

Table 4 presents a detailed socio-demographic profile of seasonal migrants, revealing a distinct pattern characterized by youth, male predominance, rural origin, and socio-economic vulnerability. The overwhelming majority (97.39%) of migrants were within the working-age population (15–64 years), reaffirming the economic nature of seasonal migration, wherein labour mobility is concentrated among those most actively engaged in the workforce. The stark gender disparity—wherein 91.28% of seasonal migrants were male—underscores the persistent gendered division of labour and entrenched socio-cultural norms that position men as primary earners and mobile laborers, while women remain confined to reproductive or informal economic roles within the household or locality. The predominance of rural migrants (93.53%) reflects deep-rooted structural inequalities in employment generation across regions, with rural areas offering limited, often seasonal, livelihood options. This spatial disparity compels rural populations to undertake short-term migration as a survival strategy. Marital status further contextualizes these patterns: 65.12% of migrants were married, suggesting that migration functions as a household-level coping mechanism aimed at augmenting income and fulfilling familial responsibilities, in line with the theoretical premise of the New Economics of Labour Migration. Educational attainment among migrants was markedly low—32.99% had no formal schooling—highlighting both the exclusion of these individuals from skilled labor markets and the correlation between educational deprivation and labor informality. This lack of human capital often confines migrants to precarious, low-wage jobs, reinforcing cycles of poverty and

marginalization. Social stratification was also evident in the data, with a disproportionately high representation of Scheduled Tribes (24.06%) and Scheduled Castes (12.16%), groups historically subjected to socio-economic exclusion. In contrast, migrants from Other Backward Classes comprised a smaller share (5.48%), indicating that seasonal migration disproportionately burdens the most disadvantaged castes and communities. Religious affiliation revealed that a majority of seasonal migrants were Hindus, followed by Muslims, indicating demographic alignment with regional population distributions but also pointing toward economic vulnerability among minority groups. Household size further influenced migratory behaviour, with 54.25% of migrants belonging to medium-sized households. This suggests a threshold effect, where family size exerts economic pressure, thereby necessitating temporary labour mobility to meet subsistence needs. Land ownership was notably skewed: 96.88% of migrants came from households with small landholdings. This overwhelming concentration of land-poor migrants underscores the agrarian distress and land fragmentation that drive seasonal migration. It also reinforces the applicability of push-pull frameworks, wherein inadequate access to productive assets in the origin region acts as a primary “push” factor. Lastly, over half of the migrants (52.37%) belonged to the lowest MPCE (Monthly Per Capita Expenditure) category, highlighting acute material deprivation. This economic marginality not only compels migration but also limits migrants' bargaining power, relegating them to the informal and often exploitative segments of labour markets.

Table 5 Logistic regression results show that factors associated with seasonal migration in West Bengal

Seasonal Migration	Adjusted Odds Ratio	Std. Err.	z	P>z
Age ^a	0.99***	0.00	-5.13	000
Sex				
Female ^R				
Male	16.48***	1.65	27.93	000
Sector				
Urban ^R				
Rural	2.78***	0.22	12.51	000
Marital Status				
Never Married ^R				
Currently Married	2.68***	0.22	11.9	000
Widowed/Divorced/Separated	1.80**	0.42	2.48	0.013
Educational Status				
Illiterate ^R				
Below Primary	1.30***	0.10	3.34	0.001
Primary	1.77***	0.12	8.24	000
Upper	1.75***	0.15	6.63	000
Secondary	1.31**	0.17	2.13	0.033
Higher and Above	1.45***	0.19	2.86	0.004
Social Group				
Others ^R				
Scheduled Tribes	1.40***	0.16	2.95	0.003
Scheduled Castes	1.31***	0.09	3.72	000
Other Backward Classes	1.07	0.12	0.62	0.534
Religion				
Hindu ^R				
Islam	1.71***	0.12	7.44	000
Others	1.41	0.31	1.57	0.116
Household Size				
9 and above ^R				
1 to 4	0.67***	0.07	-3.61	000
2 to 8	0.80**	0.08	-2.24	0.025
Land Holding				
Above 2.00 hectares ^R				
Below 1.00 hectares	2.93***	1.23	2.56	0.010
1.01 - 2.00 hectares	2.30*	1.03	1.86	0.063
MPCE				
Highest ^R				
Lowest	3.09***	0.48	7.15	000
Lower	2.37***	0.32	6.36	000
Medium	1.53***	0.20	3.2	0.001
Higher	1.31*	0.19	1.85	0.064
_cons	0.00***	0.00	-18.1	000

Note: *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$. ^R = Reference category, ^a = Age is taken as a Continuous Variable.

Note: "MPCE" stands for "Monthly Per Capita Expenditure, " which represents the average expenditure per person per month within a particular household. Sample size (N): 37,220

Source: Author's own calculation based on NSS data 2007-08.

Table 5 presents the findings from a logistic regression model estimating the probability of seasonal migration, using a range of socio-demographic covariates. The results, expressed as Adjusted Odds Ratios (AORs) along with their standard errors, z-values, and p-values, reveal nuanced dynamics underpinning seasonal migratory behavior in West Bengal. Age emerged as a significant deterrent to migration, with each additional year reducing the odds by approximately 1.2% (AOR=0.98, $p=0.000$), suggesting that younger individuals—owing to their greater flexibility and fewer familial responsibilities—are more prone to seasonal migration. This aligns with life-course theory, which posits that mobility decisions are deeply embedded within temporal stages of individual life trajectories (Elder, 1994). Gender stands out as a powerful predictor: males are overwhelmingly more likely to migrate than females (AOR=16.47, $p=0.000$), reflecting entrenched gender roles in the labour market and household economies. In rural India, men are often seen as primary earners, and this discrepancy is amplified by social network theory (Massey et al., 1993), which suggests that established male-dominated networks significantly reduce the costs and risks associated with migration. Rural residence further increased the odds of seasonal migration (AOR=2.78, $p=0.000$), emphasizing spatial disparities in employment opportunities. This finding echoes the core proposition of neoclassical migration theory (Harris & Todaro, 1970), where individuals move from low-wage, labour-surplus areas to regions with better employment prospects. The pronounced migration flows from economically disadvantaged districts like Malda and Purulia reinforce this perspective. Marital status was also influential: currently

married (AOR=2.68, $p=0.000$) and widowed/divorced/separated individuals (AOR=1.80, $p=0.013$) exhibited a greater propensity to migrate compared to the never married. This is consistent with the New Economics of Labour Migration (NELM) theory (Stark & Bloom, 1985), which views migration not as an individual act but a household strategy to diversify income sources and mitigate economic risks. In larger households, where subsistence pressures are more acute, migration becomes a necessary survival mechanism—a fact further substantiated by the elevated odds associated with household size. Educational attainment displayed a positive association with seasonal migration, though the effect attenuates with higher education levels. Primary education increased the odds (AOR=1.77, $p=0.000$), and even individuals with higher education were significantly more likely to migrate (AOR=1.45, $p=0.004$) than illiterate individuals. This may appear counterintuitive, but it is aligned with dual labour market theory (Piore, 1979), where even educated individuals in peripheral economies engage in low-skilled labour migration due to a lack of local opportunities, often accepting employment in informal sectors. Caste affiliations played a pivotal role. Scheduled Tribes (AOR=1.40, $p=0.003$) and Scheduled Castes (AOR=1.31, $p=0.000$) had significantly higher odds of seasonal migration, underscoring the intersection of social marginalization and economic vulnerability. Theories of segmented labour markets suggest that these groups are disproportionately absorbed into the secondary labour market, characterized by precarious, low-wage jobs and limited upward mobility. Religious identity also influenced migration propensity. Muslims were more likely to

migrate (AOR=1.71, $p=0.000$) than Hindus, likely reflecting socio-economic marginalization and structural exclusion, which push them toward seasonal labour markets. Other religious groups, however, did not exhibit statistically significant differences, indicating a more localized pattern. Household composition and agrarian resource base significantly affected migratory patterns. Smaller households (1–4 members: AOR=0.67, $p=0.000$; 5–8 members: AOR=0.80, $p=0.025$) were less likely to engage in migration, underscoring the collective nature of the migratory decision. Conversely, landholding size showed a negative association with migration: individuals with less than 1 hectare of land had significantly higher odds of migration (AOR=2.93, $p=0.010$), indicating that land scarcity acts as a strong push factor. This is congruent with push-pull frameworks (Lee, 1966), where agrarian distress, coupled with limited rural non-farm employment, propels out-migration. Economic status, captured through MPCE (Monthly Per Capita Expenditure), was another significant determinant. The poorest households (lowest MPCE group) had more than three times the odds of migrating compared to the wealthiest (AOR=3.09, $p=0.000$). This declining gradient across MPCE groups reiterates the role of economic deprivation in driving migration—a cornerstone of cumulative causation theory (Massey, 1990). As early migrants remit income and establish pathways, migration becomes normalized and institutionalized within poor communities, reinforcing a self-sustaining cycle. District-level disparities further reflect regional inequalities in economic structure and labour absorption capacities. High migration rates from underdeveloped districts such as Malda and Purulia are

symptomatic of entrenched underdevelopment and limited livelihood diversification. Conversely, urbanized and industrialized districts like Kolkata and Bardhaman exhibit lower out-migration rates, indicative of better employment infrastructure.

Conclusion

Seasonal migration in West Bengal was driven by a multitude of factors rooted in demographic, socio-economic, and cultural contexts. Males were significantly more likely to migrate seasonally compared to females, aligning with findings by Keshri and Bhagat (2012). This could be attributed to traditional gender roles, where men were more often expected to seek employment away from home. Individuals from rural areas had a higher likelihood of migrating seasonally than those from urban areas. This was likely driven by limited employment opportunities and lower income levels in rural regions (Paul et al., 2022). Married individuals were more likely to migrate compared to those who were never married. This could be explained by the fact that married individuals may have had greater financial responsibilities, prompting them to seek additional income through migration. Those who were widowed, divorced, or separated also showed higher migration rates, possibly due to economic necessity following a change in their household structure. Individuals with primary and upper primary education exhibit higher odds of migrating, but these odds decline at higher educational levels. This suggests that while a basic level of education may enhance mobility and access to opportunities, higher levels of education may reduce the likelihood of engaging in seasonal migration. Scheduled tribes and scheduled

castes had higher odds of migrating. These groups often faced socio-economic disadvantages and might have migrated in search of better opportunities and living conditions. Other backward classes did not show a significant difference in migration rates compared to other castes, suggesting that their migration patterns were more similar to the general population. Muslims were more likely to migrate than Hindus. This could reflect underlying socio-economic disparities where certain religious communities may have faced different economic pressures or employment opportunities. Larger households were more likely to send members to migrate. Larger families might have had more dependents and therefore greater financial needs, leading to migration as a strategy to supplement household income. Individuals with smaller landholdings were more likely to migrate. Those with less land may have found it difficult to sustain their livelihoods through agriculture alone, prompting them to seek additional income sources.

Lower Monthly Per Capita Expenditure (MPCE) was associated with higher odds of migration. This indicated that economic necessity was a significant driver of migration, with poorer households more likely to send members to seek work elsewhere. Lower economic status and smaller landholdings pushed individuals towards migration to supplement their incomes. Gender, marital status, caste, religion, and household size all played roles in determining who was more likely to migrate. Higher education levels, while generally associated with better job prospects, also correlated with higher migration, possibly due to better access to information and networks. The findings suggested that policy interventions aimed at reducing seasonal migration should be

multifaceted, addressing the specific needs of demographic groups most likely to migrate. In West Bengal, social networks, environmental issues, economic necessity, agricultural seasonality, and a lack of suitable rural infrastructure all contributed to seasonal migration. To tackle these problems, extensive policy interventions were needed that targeted rural livelihood improvement, increased agricultural output, and improved social and economic support systems to lessen the need for seasonal migration. The negative consequences of seasonal migration could be mitigated, and more equal and balanced growth could be ensured throughout the state by implementing sustainable development measures that prioritize building rural infrastructure and local employment possibilities.

The findings carry important policy implications in the context of West Bengal. Government initiatives such as the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) have been instrumental in providing wage employment in rural districts like Purulia, Bankura, and Birbhum, thereby helping to reduce distress migration. Similarly, the Shyama Prasad Mukherji Rurban Mission (Rurban Mission) has been implemented in several rural clusters to improve infrastructure and create livelihood opportunities to check rural outmigration. In addition, the Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY) focuses on skill development and job placement for rural youth, which is particularly relevant for districts with high seasonal outmigration. While these initiatives demonstrate the potential of targeted policies to shape migration decisions and improve livelihood security,

their effectiveness is often constrained by issues such as uneven implementation, limited awareness among beneficiaries, and gaps in coverage. Addressing these challenges would enhance the impact of such schemes in mitigating distress-driven seasonal migration in the state.

The present study is based on dated secondary data, which may not fully capture the most recent dynamics and patterns. This temporal gap limits the immediate applicability of the findings to current conditions. This study examines a rare event seasonal migration with low probability relative to the sample size ($N = 37,220$). Small cell counts in some subgroups may affect the stability of odds ratio estimates, so results should be interpreted cautiously. Future research with larger or reclassified datasets could provide more robust insights into migration dynamics.

Declarations

Acknowledgments

The authors acknowledge the National Sample Survey Office (NSSO) for making the unit-level data publicly available, which forms the basis of this study. The authors also appreciate the valuable insights and feedback received from colleagues during the preparation of this manuscript.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflict of Interests

The authors report no conflict of interest.

Informed Consent

Not applicable

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