



Caste, Space, and Representation: Understanding Developmental Exclusion of Scheduled Castes at the Block Level in Sitapur District

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Abstract- This research investigates the spatial aspects of socio-economic deprivation among Scheduled Castes (SCs) at the block level within Sitapur district, Uttar Pradesh. Although district-level data frequently showcases aggregated trends, such averages often mask localized disparities in developmental outcomes. To fill this void, the study utilizes a block-level analytical framework, drawing on secondary data from the Census of India 2011. Selected socio-economic indicators—literacy rates, female literacy, workforce participation, marginal employment, and child population—were standardized through Z-score normalization and amalgamated to create a Composite Deprivation Index (CDI). The blocks were then ranked to uncover patterns of intra-district inequality. The results indicate considerable spatial variation in deprivation levels among the blocks. Certain blocks, such as Laharpur and Behta, display relatively elevated levels of multidimensional deprivation, whereas others like Pahla and Gondlamau show comparatively favorable socio-economic conditions. Notably, the analysis reveals that a higher concentration of Scheduled Caste populations does not inherently lead to increased deprivation, underscoring the impact of localized institutional, educational, and economic contexts. The findings demonstrate that caste-based developmental exclusion is territorially clustered, challenging assumptions of uniform deprivation. By merging demographic concentration with multidimensional socio-economic indicators, the study accentuates the interconnected dynamics between caste, space, and representation. The findings advocate for geographically targeted interventions and decentralized planning strategies to tackle localized inequalities. In summary, the research enhances the understanding of intra-district disparities and reinforces the significance of spatial analysis in exploring caste-based developmental exclusion.

Keywords - Scheduled Castes; Developmental Exclusion; Spatial Inequality; Composite Deprivation Index; Socio-economic Disparities; Rural India.

I. Introduction

The caste system in India is one of the most persistent forms of social stratification throughout human history. It transcends a simple cultural identity, functioning as a deeply entrenched framework that governs access to land, employment, education, and political influence. Traditional sociological perspectives have highlighted that caste functions as a mechanism of graded inequality, resulting in a hierarchy of social groups with varying life opportunities (Béteille, 1965; Srinivas, 1962). At the lower end of this hierarchy are the Scheduled Castes (SCs), who have faced systemic discrimination, social exclusion, and economic marginalization for centuries. Despite



the introduction of constitutional protections, affirmative action initiatives, and focused welfare programs in post-independence India, structural inequalities continue to exist in intricate and spatially embedded forms (Shah et al., 2006; Thorat & Newman, 2010).

In India, development discourse has frequently centered on overall advancements in literacy, poverty alleviation, and infrastructure development. However, these macro-level metrics often mask localized and intra-regional inequalities. As noted by Dreze and Sen (2013), overall economic growth does not necessarily lead to a fair distribution of capabilities. Therefore, development should be perceived not just as economic growth but as the improvement of substantive freedoms and opportunities (Sen, 1999). When analyzed at more granular spatial levels, patterns of inequality become clearer, exposing uneven progress across various districts, sub-districts, and communities.

The connection between caste and space is crucial for comprehending ongoing developmental inequalities. In rural India, space is not devoid of social implications; instead, it mirrors and perpetuates the caste hierarchy. Patterns of settlement often reveal physical segregation; with Scheduled Caste communities situated on the outskirts of villages, typically marked by substandard infrastructure and restricted access to public resources. This spatial arrangement reflects what Tilly (1998) describes as "durable inequality," where categorical differences become entrenched and perpetuated over time. Consequently, spatial marginalization is not a mere coincidence but is fundamentally ingrained within caste dynamics.

Researchers in regional development have consistently observed that spatial inequality is a key characteristic of socio-economic change (Kundu & Gupta, 1996). Disparities in development are evident not only across states but also within districts, especially at the level of administrative divisions like development blocks. These blocks are essential for decentralized planning and the execution of welfare programs within India's governance structure. However, despite their administrative significance, disparities at the block level have not received adequate attention in scholarly research. The ongoing caste-based inequalities within these geographic units prompt critical inquiries into the spatial allocation of state resources and the efficacy of decentralized governance systems. The notion of social exclusion serves as a valuable analytical framework for investigating these dynamics. Social exclusion transcends mere material deprivation, encompassing the systematic denial of participation in social, economic, and political institutions (Sen, 1999; Tilly, 1998). In the context of India, caste-based exclusion manifests through mechanisms such as occupational restrictions, limited access to education, landlessness, and discrimination within labor markets (Thorat & Newman, 2010).

When these processes intersect with territorial disadvantages, they give rise to what can be referred to as "developmental exclusion"—a state in which historically marginalized communities continue to experience deprivation despite broader development efforts. Political representation, especially through constitutional reservations in Panchayati Raj Institutions, was intended as a strategy to mitigate historical marginalization. However, representation does not inherently ensure



equitable outcomes. As noted by scholars, entrenched power structures and bureaucratic limitations may hinder the transformative potential of formal inclusion (Guru, 2000; Shah et al., 2006).

Thus, evaluating developmental outcomes at the block level is crucial for determining whether political decentralization has resulted in meaningful improvements for Scheduled Castes.

II. Review of Literature

The current body of literature regarding caste and development in India is vast and encompasses multiple disciplines, including sociology, economics, geography, and development studies. While previous research mainly focused on caste as a system of ritual hierarchy and social stratification, modern studies are progressively highlighting multidimensional deprivation, spatial inequality, and the effects of governance.

- **Caste, Structural Inequality, and Contemporary Relevance**

Caste remains a deeply rooted system of stratification affecting access to land, education, jobs, and political power. While earlier studies viewed caste as a hierarchical and occupational system, recent research shows that caste-based inequalities persist through institutional and spatial mechanisms in modern India. Data reveals ongoing discrimination in labor markets, housing, and education, despite constitutional protections. Recent analyses, such as those by Pradhan et al. (2022), demonstrate that Scheduled Castes experience significantly higher levels of multidimensional poverty compared to other groups, confirming that caste is a key factor in deprivation across various socio-economic indicators. The India National Multidimensional Poverty Index report (NITI Aayog, 2023) further indicates that, despite a decline in national poverty rates, Scheduled Castes remain disproportionately affected by multidimensional poverty. These findings underscore that caste inequality is not just a relic of the past; it is a tangible and measurable issue in contemporary society.

- **Multidimensional Deprivation and Measurement**

Innovations Pradhan et al. (2022) illustrate that disparities based on caste are both multidimensional and cumulative. Their study indicates that Scheduled Castes face multiple overlapping deprivations, which heighten their vulnerability. In addition, NITI Aayog (2023) offers sub-national MPI data that highlights the inconsistent reductions in deprivation across various states and regions. Furthermore, methodological advancements have improved the measurement of deprivation. Basu and Das (2021) suggest the use of composite deprivation indices that incorporate normalization techniques and principal component analysis (PCA) to uncover regional deprivation trends in rural India. Their methodology underscores the notion that deprivation is not uniformly distributed and is more effectively analyzed through composite measures rather than relying on individual indicators. These methodological advancements are directly applicable to the construction of the block-level deprivation index for the current study.



- **Spatial Inequality and Residential Segregation**

Bharathi et al. (2021) illustrate that residential segregation in India adheres to a fractal pattern, which can be observed across various spatial scales. Their research indicates measurable clustering based on caste within urban neighborhoods.

In a follow-up study, Bharathi et al. (2022) disclose that residential segregation is closely linked to unequal access to public services, such as sanitation and infrastructure. While these investigations concentrate on urban India, their methodological advancements—incorporating spatial indices, clustering analysis, and metrics for service access—are significantly applicable to rural and block-level scenarios. Likewise, Asher et al. (2024) present extensive evidence indicating that neighborhoods with higher densities of marginalized populations frequently experience lower levels of public goods provision.

Roy (2024) further illustrates that wealth inequality in India is spatially diverse, exhibiting pronounced clustering patterns across different sub-regions. By employing GIS-based composite indices, the research underscores that deprivation is concentrated geographically rather than being randomly scattered. In addition, Islam et al. (2024) utilize geo-visualization methods to demonstrate that socio-economic inequalities display spatial autocorrelation, thereby emphasizing the necessity of localized spatial analysis. Collectively, these studies imply that caste-based deprivation should be perceived as spatially organized, underscoring the importance of block-level analysis.

Research Gap

Recent scholarship has documented persistent multidimensional deprivation among Scheduled Castes at national and state levels (Pradhan et al., 2022; NITI Aayog, 2023). Spatial analyses have revealed clustering of socio-economic inequality, particularly in urban contexts (Bharathi et al., 2021; 2022). However, three critical gaps remain:

1. Limited empirical focus on intra-district disparities at the block level.
2. Insufficient treatment of Scheduled Castes as a distinct analytical category in sub-district deprivation studies.
3. Lack of spatially disaggregated analysis in rural districts such as Sitapur.

No prior study has constructed a block-level composite deprivation index exclusively for Scheduled Castes in Sitapur district. This study fills that gap by integrating caste concentration, multidimensional indicators, and spatial differentiation.

Study Area

The research is carried out in the Sitapur district of Uttar Pradesh, India. This district is mainly rural and is marked by a reliance on agriculture and a notable presence of Scheduled Caste populations. Sitapur is administratively segmented into various development blocks, which offers a fitting structure for exploring intra-district disparities in socio-economic development. Since development planning and welfare initiatives are structured at the block level, examining variations among blocks facilitates the identification of spatial clustering and the concentration of deprivation



within Scheduled Castes. The socio-economic diversity of the district renders it a suitable case for studying block-level developmental exclusion.

Objectives of the study

- To analyze the block-wise demographic concentration of Scheduled Castes in Sitapur district.
- To assess selected socio-economic indicators of Scheduled Castes, including literacy, workforce participation, gender disparities, and child population.
- To construct a Composite Deprivation Index (CDI) to measure multidimensional developmental exclusion at the block level.

III. Research Methodology

This research employs a quantitative and descriptive research framework to investigate the variations in socio-economic conditions at the block level among Scheduled Castes in the Sitapur district. The analysis utilizes secondary data sourced from the 2011 Census of India. The methodology includes the selection of pertinent socio-economic indicators, standardization of variables, the development of a Composite Deprivation Index (CDI), and block-wise ranking to uncover patterns of developmental exclusion.

Source of Data: The research relies solely on secondary data sourced from the Primary Census Abstract (Census of India, 2011). Data pertaining to the Scheduled Caste population, literacy rates, workforce participation, gender distribution, and child demographics were gathered and organized.

Selection of variables: To capture multidimensional deprivation, indicators were selected across three domains:

- Educational dimension: Literacy rate, Female literacy rate
- Economic dimension: Total workforce participation rate, Female workforce participation rate, Percentage of marginal workers
- Demographic dimension: Percentage of child population (0–6 years)

These indicators reflect access to education, economic security, gender inequality, and demographic dependency.

Construction of Composite Deprivation Index (CDI)

Since the selected indicators were measured in different units and scales, standardization was necessary to ensure comparability across variables. The construction of the Composite Deprivation Index (CDI) involved three steps.

First, indicators representing positive developmental outcomes, such as literacy and workforce participation rates, were reverse coded so that higher values uniformly represent greater deprivation. Equal weighting was adopted to maintain interpretability and avoid over fitting, given the limited number of blocks. This ensured directional consistency among all variables included in the index.



Second, Z-score standardization was applied using the formula:

$$Z = \frac{X - \bar{X}}{SD}$$

where X represents the value of a variable for a given block, \bar{X} denotes the mean and SD indicates the standard deviation. This transformation converts variables to a common scale with a mean of zero and a standard deviation of one, thereby eliminating scale-related distortions.

Finally, the Composite Deprivation Index (CDI) was computed as the arithmetic mean of standardized scores:

$$CDI = \frac{\sum Z_i}{n}$$

Where $\sum Z_i$ represents standardized scores of individual indicators and n is the total number of variables included. Higher CDI values indicate greater levels of socio-economic deprivation.

- **Ranking and Classification**

Blocks were ranked in descending order based on CDI values to identify the most and least deprived blocks. The ranking facilitated comparative assessment of intra-district disparities and helped reveal spatial patterns of developmental exclusion among Scheduled Castes.

IV. Results and Discussions

This section presents the block-wise socio-economic profile of Scheduled Castes in Sitapur district. The analysis focuses on educational attainment, workforce participation, demographic composition, and child population to identify intra-district disparities. Table 1 summarizes the selected indicators across 18 development blocks.

Table 1 illustrates significant disparities in socio-economic indicators among different blocks. Literacy rates fluctuate from 33.42 percent in Reusa to over 50 percent in Mishrikh and Maholi, signifying uneven progress in education. Female literacy consistently lags behind overall literacy rates in all blocks, underscoring ongoing gender inequalities within Scheduled Caste communities. Workforce participation exhibits marked differences as well. Blocks such as Rampur Mathura, Gondlama, and Pahla demonstrate relatively higher total workforce participation, yet female workforce participation remains inconsistent, indicating gender-specific trends in labor involvement.

The share of marginal workers is notably higher in blocks like Pahla and Gondlamau, reflecting a state of employment vulnerability. The percentages of child populations differ across blocks, with elevated proportions in Rampur Mathura and Reusa, indicating demographic pressures and dependency burdens in these regions. These discrepancies emphasize the spatial diversity of socio-economic conditions among Scheduled Castes within the district.



Table 1: Selected Socio-Economic Indicators of Scheduled Castes at the Block Level, Sitapur District (Census 2011)

Block	SC %	Literacy (%)	Female Literacy (%)	Total Workforce (%)	Female Workforce (%)	Marginal Workers (%)	Child Population (%)
Laharpur	34.05	41.76	36.25	30.01	12.01	7.60	18.04
Behta	34.68	36.56	35.79	32.40	18.39	8.68	18.74
Reusa	22.48	33.42	33.78	33.61	20.52	10.42	19.77
Machhreta	45.05	49.72	38.77	26.59	10.74	10.85	16.54
Mahmudabad	20.54	44.35	37.00	31.14	16.49	9.22	18.97
Sakran	36.49	34.94	36.21	33.89	22.00	8.68	19.24
Hargaon	39.79	46.79	37.01	31.06	15.73	9.75	17.12
Rampur Mathura	20.69	34.47	34.63	34.39	22.45	11.11	20.57
Pisawan	28.77	48.51	36.22	32.45	15.84	10.74	17.39
Ailiya	35.47	49.52	37.01	31.37	16.32	10.68	18.18
Parsendi	36.79	44.12	36.94	33.08	18.49	10.27	18.33
Kasmanda	41.95	48.06	37.06	31.96	18.93	9.95	17.65
Khairabad	35.14	47.31	37.67	32.13	17.38	11.06	17.96
Mishrikh	45.77	50.08	39.84	32.42	12.54	10.14	17.11
Maholi	38.20	50.54	37.25	32.54	17.90	11.00	17.21
Biswan	32.82	43.44	36.41	33.49	21.49	11.58	18.20
Gondlamau	43.20	48.01	36.24	34.49	15.75	12.78	17.34
Pahla	36.60	44.74	37.54	33.44	21.59	12.94	18.58

Source: Computed from Census of India 2011, Primary Census Abstract (Scheduled Caste Population).



Table 2: Composite Deprivation Index (CDI) and Block-wise Ranking of Scheduled Castes in Sitapur District (Census 2011)

Rank	Block	SC %	CDI
1	Laharpur	34.05	1.11
2	Behta	34.68	0.57
3	Reusa	22.48	0.47
4	Machhreh	45.05	0.42
5	Mahmudabad	20.54	0.29
6	Sakran	36.49	0.20
7	Hargaon	39.79	0.18
8	Rampur Mathura	20.69	0.01
9	Pisawan	28.77	-0.07
10	Ailiya	35.47	-0.12
11	Parsendi	36.79	-0.17
12	Kasmanda	41.95	-0.18
13	Khairabad	35.14	-0.34
14	Mishrikh	45.77	-0.37
15	Maholi	38.20	-0.46
16	Biswan	32.82	-0.48
17	Gondlamau	43.20	-0.57
18	Pahla	36.60	-0.90

Table 2 illustrates the Composite Deprivation Index (CDI) along with the block-wise ranking of Scheduled Castes in the Sitapur district. The findings indicate notable intra-district variations in socio-economic deprivation. Laharpur (CDI = 1.11) is identified as the most deprived block, succeeded by Behta and Reusa, which reflect relatively elevated levels of educational and economic vulnerability. Conversely, Pahla (CDI = -0.90) and Gondlama (-0.57) demonstrate significantly lower levels of deprivation. The distribution of CDI values indicates that developmental exclusion is not evenly spread across blocks, but rather varies significantly within the district. Blocks exhibiting moderate CDI values represent transitional socio-economic conditions, whereas those with higher positive scores reveal multidimensional disadvantages.

A comparison of the concentration of the Scheduled Caste population with the CDI ranking further implies that a higher demographic concentration does not necessarily equate to increased deprivation. For example, Mishrikh, despite possessing one of the largest shares of the SC population, ranks relatively lower in terms of deprivation. This suggests that spatial context, local governance, and socio-economic frameworks play a crucial role in shaping developmental outcomes. In summary, the results highlight the spatial aspect of caste-based exclusion, indicating that developmental inequalities are influenced not only by caste composition but also by localized socio-economic factors.



V. Overall Discussion

The results derived from the Composite Deprivation Index (CDI) demonstrate substantial intra-district variation in the socio-economic conditions of Scheduled Castes across the blocks of Sitapur district. The uneven distribution of deprivation across space indicates that developmental exclusion is not uniformly experienced but is instead shaped by localized structural factors. This finding highlights the importance of examining caste-based inequalities at the sub-district level, where finer spatial differences in socio-economic conditions become more apparent. The identification of Laharpur, Behta, and Reusa as the most deprived blocks suggests that specific territorial contexts continue to reinforce structural disadvantages for Scheduled Castes. These areas display relatively weaker educational attainment and workforce vulnerabilities, contributing to their higher deprivation scores.

The concentration of elevated CDI values within certain blocks indicates that deprivation is spatially patterned rather than randomly dispersed. Such territorial clustering resonates with theoretical arguments emphasizing the interaction between caste and spatial structures in reproducing inequality. A particularly noteworthy finding emerges from the comparison between Scheduled Caste population share and CDI ranking. The analysis indicates that a higher demographic concentration of Scheduled Castes does not automatically correspond to greater deprivation. For example, Mishrikh, despite having one of the largest proportions of Scheduled Caste population, records a comparatively lower level of deprivation. In contrast, Reusa, with a smaller SC concentration, ranks among the more deprived blocks. This divergence challenges deterministic assumptions that numerical presence alone dictates socio-economic outcomes. Instead, it underscores the significance of contextual factors such as governance quality, infrastructural access, educational facilities, and labor market structures in shaping developmental trajectories.

Blocks positioned within the moderate range of CDI values appear to reflect transitional socio-economic conditions. While some improvements in literacy and workforce participation may be visible, persistent vulnerabilities—such as employment precarity and demographic pressure—continue to constrain overall development. Moreover, inter-block differences in female literacy and female workforce participation highlight the gendered dimension of deprivation within Scheduled Caste communities. Lower levels of female participation in certain blocks suggest the presence of compounded disadvantages arising from the intersection of caste and gender.

The findings reinforce theoretical perspectives linking caste and spatial reproduction of inequality (Tilly, 1998). Developmental exclusion among Scheduled Castes is not uniformly experienced but territorially embedded. The results also align with Sen's (1999) capability approach, demonstrating that demographic presence alone does not determine access to opportunities. Instead, localized institutional and economic contexts shape the expansion or restriction of capabilities. Gender disparities further reveal intersecting disadvantages, as blocks with lower female literacy and workforce participation exhibit compounded vulnerabilities.



VI. Conclusion and Suggestions

This study demonstrates that caste-based developmental exclusion in Sitapur district is spatially differentiated and territorially clustered at the block level. By integrating caste concentration with multidimensional socio-economic indicators, the analysis highlights the interconnected dynamics of caste, space, and institutional context. Addressing deprivation among Scheduled Castes requires geographically sensitive, decentralized policy frameworks that recognize intra-district heterogeneity rather than relying solely on aggregate district-level metrics.

The findings of this study underscore the necessity of adopting spatially differentiated policy interventions at the block level. First, educational infrastructure investments should be prioritized in the most deprived blocks to address persistent literacy deficits, particularly among Scheduled Caste communities. Second, targeted initiatives aimed at enhancing female literacy and expanding women's access to stable employment opportunities are essential to mitigate the compounded disadvantages arising from the intersection of caste and gender.

Third, the high prevalence of marginal employment in several blocks indicates the need for livelihood diversification strategies, including skill development programs and access to non-agricultural income sources. Fourth, district development funds should be allocated based on deprivation intensity rather than uniform distribution, ensuring that blocks exhibiting higher Composite Deprivation Index (CDI) values receive proportionately greater support. Finally, strengthened monitoring and accountability mechanisms at the block level are required to enhance the effectiveness of welfare scheme implementation. Overall, the evidence suggests that uniform district-level planning frameworks are inadequate to address spatial heterogeneity in deprivation, thereby necessitating territorially responsive development strategies.

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