

Residential Segregation and Unequal Access to Local Public Services in India: Evidence from 1.5m Neighborhoods

Based on BFI Working Paper No. 2026-28, “Residential Segregation and Unequal Access to Local Public Services in India: Evidence from 1.5m Neighborhoods,” by Anjali Adukia, University of Chicago; Sam Asher, Imperial College London; Kritarth Jha, Development Data Lab; Paul Novosad, Dartmouth College; and Brandon Tan, Harvard University

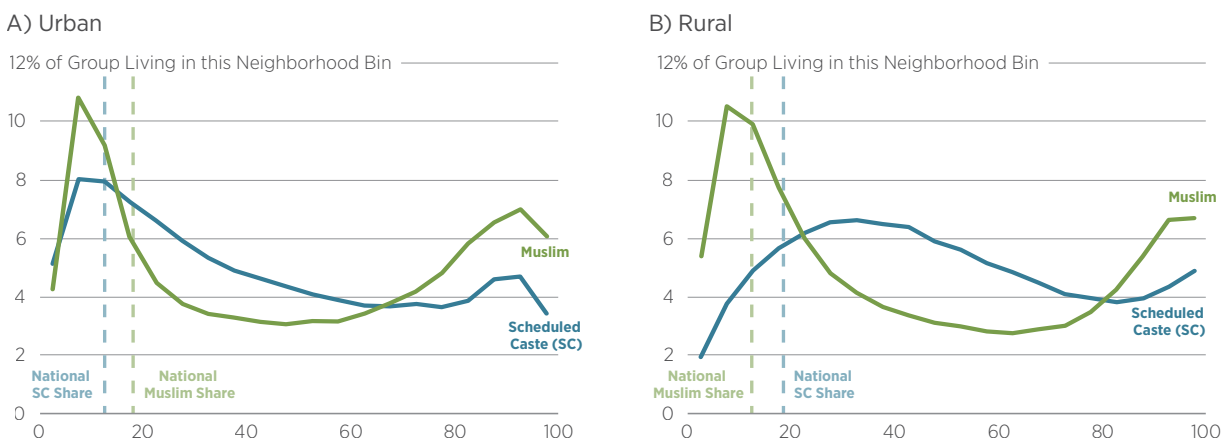
This paper presents a novel national analysis of segregation and access to public services in India’s urban and rural neighborhoods, revealing that the country’s growing cities (considered engines of upward mobility) largely replicate the caste and religious disparities of its villages, thus presenting a challenge, and opportunity, for India to change course.

Residential segregation of marginalized groups is a well-established driver of persistent inequality in wealthy countries. Segregated communities tend to have worse access to employment networks, public services, and social capital, and face more entrenched stereotypes in the broader population.¹ Most existing research, however, focuses on the

United States and Europe. This research gap is significant because the policy stakes are high in rapidly urbanizing developing regions where settlement patterns are still forming and, likewise, where governments have an opportunity to stem the tide of segregation before its negative consequences become inexorable.

¹ See, e.g., BFI Working Paper No. 2026-23: Fogli, Alessandra, Veronica Guerrieri, Mark Ponder, and Marta Prato, “The Macroeconomic Effects of Neighborhood Policies: A Dynamic Analysis.”

Figure 1 • Population Distribution as a Function of Marginalized Group Share



Note: This figure shows the distribution of Scheduled Caste and Muslim population shares across their own neighborhood group share. For instance, the rightmost point of the green line in Panel B shows that 7% of Muslims live in neighborhoods where the Muslim share is between 95 and 100%.

In this descriptive paper, the authors employ a novel dataset to reveal settlement and segregation patterns of marginalized groups across Indian cities and villages, and the relationship between these settlement patterns and access to public services. They focus on the segregation of members of Scheduled Castes (SCs), often called Dalits or (previously) Untouchables, and of Muslims.

India offers a particularly important case for several reasons. First, sheer scale: the two groups studied, SCs and Muslims, together number over 300 million people.² Second, their disadvantages are rooted in historical inequalities (the **caste system**, **communal violence**, and **partition-era displacement**) that have persisted across generations. However, it remains an open question on how much urbanization and economic liberalization are changing these patterns. And third, Indian policy has traditionally focused on disparities at the district level, which are administrative aggregations of roughly 1,000 villages and 10 towns. However, schools, clinics, and water connections only benefit people if they are accessible from where those people

live. Understanding inequality therefore requires examination at a finer geographic scale.

To conduct their analysis, the authors link three administrative datasets: India's Population Census (2011), the Socioeconomic and Caste Census (2012), and the Economic Census (2013), covering 63% of India's population. Together these allow neighborhood-level description of demographics, infrastructure access (water, sewerage, electricity), and the presence of public and private schools and medical facilities.

As noted above, the authors' analysis is explicitly descriptive; they document patterns of segregation and service access but do not attempt to disentangle the mechanisms behind them, that is, whether it's discrimination, voluntary clustering (**homophily**), **economic sorting**, or some combination. Establishing these baseline facts is a necessary first step toward causal work. The two primary segregation measures used are the **dissimilarity index** (how evenly a group is spread across a city's neighborhoods relative to the overall city composition) and the **isolation index** (the

² India's most recent census (2011), put India's Muslim population at 14.2% of the country's total, with Hinduism comprising 79.8 percent. At the time of the census, India's Muslim population was growing faster than its Hindu population. India's next census is set for 2027.

caste system: a rigid social hierarchy, primarily associated with Hinduism in India, which divides society into four main castes and thousands of sub-castes. Inherited at birth, it dictates social status, occupation, and interaction, often resulting in systemic discrimination. India's Scheduled Caste communities are historically endogamous groups (only marrying within a particular social group) that occupy the lowest tiers of the caste system. They have experienced occupational and social segregation for thousands of years. Social norms have historically placed them in low-status occupations, like scavenging, emptying toilets, or handling animal carcasses, with virtually no prospect of upward mobility. The practice of "untouchability," now banned but still practiced in some form by many households, can take the form of segregation in schools, temples, markets, and in homes. Since independence in 1947, the government of India has worked to mitigate the socioeconomic disadvantages of SCs through a range of programs and policies.

communal violence: violence perpetrated across ethnic or communal lines. In India, during the 1947 partition, there was extensive religious violence between Muslim-Hindu, Muslim-Sikhs, and Muslim-Jains; this violence, at varying levels, has persisted.

partition-era: the period surrounding the August 1947 division of British India into independent India and Pakistan, marking the end of British rule, and resulting in the displacement of 15 million people and hundreds of thousands of deaths due to communal violence

homophily: the principle that individuals tend to form connections, friendships, and bonds with others who are like them in characteristics like age, gender, race, education, or attitudes

economic sorting: the process where individuals, households, or firms self-select into specific locations or markets based on preferences, income, or productivity, leading to distinct spatial or professional clusters. It can explain phenomena like income-based neighborhood segregation, high-skill workers matching with productive firms, and the concentration of businesses in specific cities.

dissimilarity index: as noted in the text, this index measures how evenly a group is spread across a city's neighborhoods relative to the overall city composition. Specifically, it represents the percentage of one group that would need to relocate for two groups (e.g., racial, income) to be distributed evenly across a geographic area. It ranges from 0 (total integration) to 100 (total segregation). A score of 60 or higher is generally considered high segregation.

isolation index: as noted in the text, an isolation index is the probability that a random member of the group has a neighbor from the same group, capturing the experience of the most concentrated neighborhoods. This index measures the extent to which members of a specific group (whether racial, ethnic, or demographic, for example) inhabit geographic areas populated primarily by members of their own group. It acts as a measure of segregation or concentration, often ranging from 0 to 1.0 or 0 to 100, where higher values indicate greater isolation from other groups.

The magnitudes are striking. Compared to a 0% Muslim neighborhood, a 100% Muslim neighborhood in the same city is 10% less likely to have access to piped water, and half as likely to have a secondary school. For schools and clinics, which are services delivered by government, Muslim neighborhoods suffer disadvantages roughly double those of SC neighborhoods.

probability that a random member of the group has a neighbor from the same group, capturing the experience of the most concentrated neighborhoods). They find the following:

Substantial Residential Segregation

- Muslims and SCs exhibit notably high levels of residential segregation. By way of international comparison, their segregation levels fall slightly below those of Black Americans and non-white people in England and Wales but exceed those of minority groups in almost every other country for which comparable data exists.
- SCs and Muslims rank differently depending on which index is used: While the dissimilarity index suggests broadly similar segregation levels between Muslims and SCs, the isolation index, which is more sensitive to the most concentrated neighborhoods, ranks Muslims as more segregated, because highly concentrated Muslim enclaves are more common. To the point: 26% of Muslims live in neighborhoods that are more than 80% Muslim, compared with 16% of SCs.
- Urban and rural segregation are highly correlated across regions for both groups, suggesting that Indian cities are not creating new settlement patterns but replicating rural ones that have been in place for centuries. For those hoping that urbanization would ameliorate inherited inequalities, this is a sobering finding.
- Muslims are relatively more segregated in cities than in rural areas compared with SCs; relatedly, SC urban segregation has marginally declined.

- Larger, poorer, and older cities tend to have higher segregation for both groups. Cities that have experienced more episodes of religious violence also have higher Muslim segregation. Cities with larger Muslim populations have higher Muslim segregation (mirroring patterns observed for Black communities in the United States), but there is no equivalent relationship between SC population share and SC segregation.
- There is a strong negative correlation between Muslim segregation and upward intergenerational mobility (defined as improvement in relative educational attainment across generations). For Muslims, who are already the least upwardly mobile major social group in India, segregation is actively perpetuating their disadvantage.

Systematic Deprivation of Public Services

- Access to public services is systematically worse in neighborhoods where marginalized groups are concentrated, including such public infrastructure and services as primary and secondary schools, medical clinics, piped water, electricity, and covered sewerage.
- These disparities are not offset by private providers; private services are also less accessible in marginalized neighborhoods.
- The magnitudes are striking. Compared to a 0% Muslim neighborhood, a 100% Muslim neighborhood in the same city is 10% less likely to have access to piped water, and half as likely to have a secondary school.
- For schools and clinics, which are services delivered by government, Muslim neighborhoods suffer disadvantages roughly double those of SC neighborhoods.
- For infrastructure goods like electricity, water, and drainage, which have both public (network) and private (connection) components, SC neighborhoods (poorer on average) fare worse.

Aggregation Effects

- Observing inequality at higher levels of geographic aggregation, districts or subdistricts, produces a misleading picture.
- Districts and subdistricts with large SC populations have *more* public facilities on

average. However, the cross-neighborhood allocation of these services within subdistricts and towns reveals that these facilities are concentrated in non-SC neighborhoods. Higher-level resource allocation is not translating into neighborhood-level access.

- For Muslims, there is no advantage or disadvantage at higher levels of aggregation. The large neighborhood-level disparity *is* the aggregate disparity; nothing is being offset at any scale.
- These aggregation effects matter for policy. The most consequential inequalities operate at the most local and informal levels of governance, within towns and village clusters, precisely where government accountability is weakest, oversight is most limited, and where affirmative action policies (codified at the district and subdistrict level) have the least reach.

Bottom line: This first-ever national-scale analysis of segregation and access to public services in India's urban and rural neighborhoods reveals that the segregation endemic in India's rural neighborhoods has moved to its cities, and that religious and caste identity of the people in urban neighborhoods is strongly predictive of public service provision. However, this descriptive finding is not prescriptive of the future. India's early stage of urban development means that the country can still make choices that address the negative consequences of urban segregation. These lessons also apply to other urbanizing lower- and middle-income countries around the world.

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