

Spaces of Discrimination

Residential Segregation in Indian Cities

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Using ward-level data from Census 2001, this paper finds high levels of residential segregation by caste in India's seven largest metro cities – Mumbai, Delhi, Kolkata, Chennai, Bangalore, Ahmedabad and Hyderabad. In each of these cities, residential segregation by caste is more prominent than the level of segregation by socio-economic status. It offers some preliminary explanations for the observed differences in the level of residential segregation by caste across cities and highlights areas for future research.

1 Background

India's caste system has long been cited as a source of inequality and social and spatial segregation. However, increased urbanisation and the economic and cultural environment of cities have been theorised to erode the dominance of existing social structures, such as caste (Rao 1974). Urban sociological theory argues that as individuals and groups adapt to city life, prior forms of social organisation weaken and modify (Park 1967; Wirth 1938). A recent study partially supports this line of reasoning and finds that caste inequalities by education, income and social networks are less strong in India's metro cities – though the same holds true in less-developed villages – while they are higher in developed villages and in smaller cities (Desai and Dubey 2011). Recent social science research on caste in urban India also suggests that caste identities continue to shape schooling decisions, educational outcomes and the likelihood of securing jobs (Munshi and Rosenzweig 2006; Thorat and Newman 2010). In the light of the Government of India's decision to enumerate every household by caste, the findings of this paper hope to contribute to the active debate over if, and how, caste remains salient in 21st century urbanising India.

Where people live invariably shapes their social interactions and social networks, health outcomes, and sense of self, other and community. As “social relations are so frequently and so inevitably correlated with spatial relations”, the residential locations of individuals and groups reflect the hierarchies of advantage in a society (Park 1925: 10). For example, a recent study of eight Indian cities found that historically disadvantaged castes disproportionately live in slums (Gupta et al 2009). Previous quantitative studies of residential segregation in Pune and in Delhi also find segregation by socio-economic status, caste and religion, with segregation being the greatest for both the highest and lowest status groups (Dupont 2004; Mehta 1968, 1969). This paper seeks to extend quantitative techniques used to measure residential segregation in cities throughout the world to empirically test the degree to which residential segregation by caste exists in India's seven largest metro cities, where we would expect caste inequality to be the least, given high levels of urbanisation. In addition, this paper will examine if residential segregation by caste is greater than residential segregation by socio-economic status.

Using ward-level data from the Census of India 2001, we find high levels of residential segregation by caste in India's seven largest cities. Our analysis additionally suggests that

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residential segregation by caste surpasses residential segregation by socio-economic status in each city. We offer some preliminary explanations for the observed differences in the level of residential segregation by caste across India's mega-cities with similar median ward sizes. We conclude with a discussion of the limitations of our analysis and highlight areas for future research.

2 Residential Segregation in Urban India

The relationship between residential location and social status has been a rich area of study in social science research, especially in the us. As early as the 1920s, urban theorists of the Chicago School argued that spatial relations reflect the social distance between groups (Burgess 1925; Park 1925). Predating the oft-cited Chicago School research on urban spatial relations by two decades, W E B Du Bois (1903:165) argued in his seminal critique of the racial "colour line" separating blacks and whites in the us that the "physical proximity of home and dwelling places, the way in which neighbourhoods group themselves and the contiguity of neighbourhoods" is one of the "main lines of action and communication" across individuals and social groups.

Research on Indian cities has also found high degrees of residential segregation by socio-economic status, religion and caste. Particularly important in this regard are a series of studies conducted on residential segregation in Pune in the late 1960s that were inspired by the work of Chicago School theorists, particularly the work by Duncan and Duncan (1955, 1957) on racial segregation in the us. In Mehta's (1968, 1969) classic studies of patterns of residence in Pune, he draws upon rich longitudinal data to examine segregation by income, education, occupation, caste and religion. Using city wards as the unit of analysis, he finds that segregation in residence is greatest for groups with the highest and lowest status, both with regard to socio-economic status and caste. Between 1822 and 1937, Mehta (1969) finds the largest relative increases in the degree of segregation among brahmins and the depressed classes. He also disaggregates the effect of caste and income on the level of residential segregation and finds that only one-fifth of the level of residential segregation found between brahmins and the depressed classes¹ can be attributed to differences in income (Mehta 1969). He argues that if income or occupation had determined where households of each caste or religious group lived, then the extent of residential segregation would have been much less. In addition, he looks at patterns of centralisation and finds that rich and upper-caste Hindus tend to be centralised, while those belonging to the low socio-economic groups and lower castes are decentralised. Moreover, this pattern has lasted for the 150-year period (1822-1965) covered in the study (Mehta 1968, 1969).

This paper seeks to build on Mehta's findings and explore the degree of residential segregation by caste and socio-economic status in India's seven largest cities at the start of the 21st century. We would expect that ongoing urbanisation in these cities would continue to alter the patterns of residential segregation found by Mehta (1968, 1969). Similar to Mehta, we are limited

by data available at the ward level, which is a large spatial unit both in terms of geographic area and population size. Unlike Mehta, our measures of caste and socio-economic status are limited to publicly-available census data; therefore, the measures are less nuanced and do not allow us to examine differences across socio-economic groups and caste divisions. In addition, we have been unable to explore how religion shapes patterns of residence, as census data on religion is publicly available only at the district level.

A cautionary note argued by White (1983) is that groups with high social distance may be found to live in the same neighbourhood but not interacting with each other and vice versa. In this regard, although this paper is based on the assumption that spatial proximity is important and shapes the nature of one's social life, we remain acutely aware that shared residence in an urban ward represents a range of diverse relationships and degrees of interaction that our analysis cannot begin to explore. However, our analysis remains an important preliminary exploration into the macro patterns of caste-based residential segregation in India. This paper seeks to contribute to the emerging body of social science research that attempts to understand the salience of caste in contemporary urban India.

3 Methodology

This section discusses the sources of data, the methods employed, the measurement details and the challenges in our examination of whether there is residential segregation by caste in India's megacities and how it varies across cities.

3.1 Data

We utilise data from the 2001 Census, a decennial exercise that aims to compile information on every household in the country. The enumerators collect household-level data (for example, housing quality and materials, number of rooms in a house, and ownership status) and individual-level characteristics (for example, age, gender, years of schooling, literacy status, caste membership, migration history, and economic activity of workers) for each member of the household. There is no specific question on income or consumption level in the census. The caste question enquires whether an individual belongs to a scheduled caste (sc) or scheduled tribe (st);² if an individual is not an sc or st, he or she is marked as "other". The 2001 Census classifies 24% of Indians as belonging to scs and sts. Table 1 lists

Table 1: Percentage of Scheduled Castes and Scheduled Tribes in India's Seven Largest Cities in 2001

City	SC	ST	SC/ST
Ahmedabad	12.1	.97	13.09
Bangalore	11.11	1.06	12.17
Chennai	13.76	.15	13.92
Delhi	15.87	—	15.87
Hyderabad	7.38	0.88	8.26
Kolkata	6.01	0.21	6.22
Mumbai	4.88	0.76	5.64

Source: 2001 Census.

the percentage of scs and sts in the seven largest cities in India included in this analysis, which are Mumbai, Delhi, Kolkata, Chennai, Bangalore, Ahmedabad and Hyderabad.

In this analysis, we use data for select urban municipal corporations. The corporation boundaries coincide with the city limits, within which municipal governments provide

several key public services. Municipalities are divided into numerous wards and municipal councillors are elected from wards; therefore, this geographic unit has both administrative and political saliency. In our analysis, we use aggregated individual-level data provided at the ward level for each municipal corporation. Table 2 lists the total population, number of wards and median ward size for the seven largest Indian cities.

Table 2: Total Population, Number of Wards, and Median Ward Size in India's Seven Largest Cities in 2001

City	Total Population	No of Wards	Median Ward Size
Ahmedabad	35,20,085	43	74,957
Bangalore	43,01,326	100	39,729.5
Chennai	43,43,645	155	24,145
Delhi	1,00,91,855	128	76,691
Hyderabad	36,37,483	24	64,419
Kolkata	45,72,876	141	29,647
Mumbai	1,19,78,450	100	77,667

Source: 2001 Census.

3.2 Methods

To explore whether there is residential segregation by caste in India's megacities, we look at the variation in residential segregation across three dimensions for each city – gender, caste and socio-economic status. Table 3 provides the descriptive statistics for these three measures for the cities in our study. We find that Delhi has the highest percentage of a combined sc/st population, close to 16% of its population, and Mumbai and Kolkata the lowest at approximately 6%. Hyderabad (8.3%), Bangalore (12.2%), Ahmedabad (13.1%) and Chennai (13.9%) fall in between with regard to their sc/st population.

Table 3: Percentage of Male, SC/ST and Literate Males in India's Seven Largest Cities in 2001

City	Male	SC/ST	Literate, Male
Ahmedabad	53.0	13.1	77.6
Bangalore	52.1	12.2	79.7
Chennai	51.1	13.9	81.1
Delhi	54.8	15.9	76.0
Hyderabad	51.8	8.3	73.0
Kolkata	54.7	6.2	77.0
Mumbai	55.3	5.6	81.4

Source: 2001 Census.

As a baseline measure to serve as a reference for our other measures, we first calculate the degree of residential segregation by gender. Logically, we would expect the residential segregation by gender to be very low within each city and provide a point of comparison for our social indicator of substantive interest; in this case, caste-based segregation.

We then calculate residential segregation by caste. To do this, we combine the data on sc/st populations and compare it to individuals who have not identified themselves as belonging to an sc or st (non-sc/st). We combine these two groups for two reasons. One, the number of st individuals is very low in many cities at the ward level. In addition, as both scs and sts have been the most excluded and discriminated groups, they have been afforded similar constitutional rights in the form of affirmative action policies. Given that historically the location of residences in villages has been highly related to untouchability and that sts have lived in relative social isolation, distinguishing between sc/st and "other" seems to capture a distinction that is particularly relevant to patterns of residence in India. By comparing the degree of residential segregation by gender as a baseline measure to segregation by caste in each city, we observe

whether residential segregation by caste exists within each of India's megacities.

Finally, we calculate the level of residential segregation by socio-economic status. This final measure helps us compare whether segregation by socio-economic status or by caste is the more powerful axis of residential stratification in urban India. As mentioned earlier, the census does not include information on income or consumption – two common indicators of socio-economic status. Instead, we use data on male literacy as a blunt measure of socio-economic status. As women in many parts of the country have been traditionally excluded from schooling at higher levels, even among many middle and upper class households and particularly among older generations of women, female literacy fails to correlate strongly with socio-economic status in the Indian context. Therefore, to determine the degree of residential segregation by socio-economic status, we calculate the degree of residential segregation by male literacy.³ By comparing this measure to the level of residential segregation by caste within each city, we empirically test whether it is socio-economic status or caste that plays a stronger role in structuring patterns of urban residence in India.

Our discussion of results concludes by exploring how residential segregation by caste varies across Indian cities. We compare the level of caste segregation across cities that have a similar median ward size to avoid the possibility of drawing spurious conclusions due to a high correlation between our measure of segregation and median ward size (as will be illustrated in the next section).

3.3 Measurement

To calculate the level of residential segregation for each of the three dimensions discussed above, we use the index of dissimilarity (denoted by D), a measure of evenness, for two reasons. First, this index has been hailed as the workhorse of segregation indices for two-group comparisons, such as those afforded by the variables of interest in our study. The three indicators used in this analysis – caste, gender and socio-economic status – are dichotomous in our data. Our measure of caste creates two groups – sc/st versus other castes. Gender consists of two categories – male or female. Socio-economic status is operationalised through the measure of male literacy, which again has two categories – each male is either literate or illiterate. The second reason for using the dissimilarity index is that it has an easy to comprehend verbal interpretation – "the fraction of one group that would have to relocate to produce an 'even' (unsegregated) distribution" (White and Kim 2005: 405).

There are two methodological challenges in our analysis of residential segregation given the nature of our data. First, within each city, the ward size varies. Second, there is a substantial variation in mean and median ward size across cities. To address the first challenge of varying ward size within a city, we compare the degree of residential segregation within each city across different measures – the deviation in residential segregation between gender and caste, as well as between caste and socio-economic status. This within-city comparison

helps us make sense of the dissimilarity level for caste in each city with reference to the other two measures.

The second challenge of varying ward sizes across cities raises the question of whether differences in dissimilarity across cities are mere reflections of differences in median ward size. Since the index of dissimilarity is sensitive to the size of underlying area units, in this case wards, it raises a concern that as the median ward size increases, dissimilarity may decrease. Given our small sample of cities, testing for the correlation between median ward size and the dissimilarity level does not provide convincing results. Therefore, we increased our sample of cities to include the three to five biggest cities across a sample of states to represent the eastern, western, northern and southern regions of the country (the analysis is not shown here, but can be provided on request). In doing so, we increased our sample size from seven to 31 cities. We then calculated the correlation between median ward size and dissimilarity and found a correlation of 0.36. This level of correlation convinced us to take a conservative approach and restrict our comparisons to cities with similar median ward size. Therefore, for the seven mega cities in this paper, we carry out comparisons among groups of cities with similar median ward sizes. By comparing cities of similar median ward size, we avoid the problem of any biased comparisons that may arise from high correlations between dissimilarity and median ward size.

In addition to these issues, Fossett and Zhang (2010) have argued that the conventional formulation of the index of dissimilarity is subject to a measurement bias when the group sizes within the census tract (or ward, in our case) are very small. Massey and Denton (1992: 171) argue that “the index of dissimilarity is inflated by random variation when group sizes get small” (Massey 1978). Considering that we had relatively small percentages of sc/st population in some cities, for example 5.9% in Mumbai, we were worried that we might be introducing such a measurement bias in our findings. We therefore used the modified formula suggested by Fossett and Zhang (2010) to calculate an index of dissimilarity but found that our dissimilarity values did not change. This is probably due to the large size of wards in India such that the combined sc/st population is great enough to warrant the use of the conventional formula for a dissimilarity measure, which is what we present in this paper.

4 Results

For our baseline measure in each city, we calculate the degree of residential segregation by gender (Table 4, column 1). We find that the degree of residential segregation by gender is small across India’s seven largest cities though it does vary from a dissimilarity of .006 (Hyderabad) to .065 (Kolkata). In Hyderabad and Ahmedabad, we find that the residential segregation by gender is negligible – less than 1% of men would have to relocate to produce an even distribution of men across the city. The degree of residential segregation by gender is also small in Bangalore, Chennai, Delhi and Mumbai, ranging from a dissimilarity of .016 to .035 across the four cities. Among the four, it is the highest in Mumbai – 3.5% of men

would have to relocate to produce an even distribution. In Kolkata, we find the highest degree of residential segregation by gender, with a dissimilarity index of .065. Preliminary investigations find a spatial concentration of wards with a high proportion of the city’s slum population, especially on the city’s periphery. Kolkata’s relatively higher unevenness in gender distribution could be due to the concentration of male migrants living in a cluster of wards with a high concentration of slums.

Table 4: Dissimilarity by Gender, Caste and Socio-Economic Status in India’s Seven Largest Cities

City	D_Gender (1)	D_Caste (2)	D_SES (3)
Ahmedabad	0.008	0.325	0.098
Bangalore	0.016	0.278	0.138
Chennai	0.017	0.293	0.126
Delhi	0.029	0.319	0.137
Hyderabad	0.006	0.194	0.110
Kolkata	0.065	0.364	0.211
Mumbai	0.035	0.222	0.104

Source: 2001 Census.

Next, we calculate residential segregation by caste to see how it compares to our baseline of residential segregation by gender in each city (Table 4, column 2). We find that in each city the degree of residential segregation by caste is substantially greater than the degree of residential segregation by gender. Ahmedabad has the highest level; while only 0.8% of men would have to move to produce an even distribution of gender across the city, 32.5% of sc/st would have to move to produce an even distribution by caste across it. Bangalore and Chennai have comparably low dissimilarity indexes for gender (.016 and .017 respectively), but both cities have much higher levels of residential segregation by caste – 0.278 and 0.293 respectively. In the case of Kolkata, compared to 6.5% of men having to move to produce an even distribution by gender, 36.4% of sc/st would have to move to produce an even distribution by caste. Hyderabad and Mumbai have the lowest relative increases in dissimilarity between gender and caste, but they are still sizeable and substantively significant increases. While 0.6% and 3.5% of men would have to move in Hyderabad and Mumbai respectively, 19.4% and 22.2% of sc/st would have to move in Hyderabad and Mumbai respectively to produce an even distribution across each city.

To compare the residential segregation by caste and socio-economic status for each city, we then calculate the dissimilarity index for socio-economic status using male literacy as our proxy (Table 4, column 3). We find that the degree of residential segregation by socio-economic status across India’s seven largest cities varies from a dissimilarity of .098 (Ahmedabad) to 0.211 (Kolkata). We discover that in all seven cities the degree of residential segregation by caste is greater than the degree of residential segregation by socio-economic status.⁴ We also find that the level of residential segregation by socio-economic status is greater than the residential segregation by gender. Ahmedabad has the greatest percentage difference between segregation by socio-economic status and caste. While 9.8% of literate men would have to move to produce an even distribution by socio-economic status, 32.5% of sc/st would have to move to produce an even distribution by caste across the city. Within each city, the dissimilarity index for residential segregation by caste is substantially greater than the dissimilarity index for segregation by socio-economic status.

We now return to our calculation of dissimilarity for residential segregation by caste, which as stated earlier varies from .194 to .364 across the cities in our study (Table 4, column 2). Given our previous findings that dissimilarity and median ward size are correlated, we compare the level of caste segregation across mega cities with a similar median ward size (see Table 2). Based on this criterion, we are able to create two groups of comparison cities – one, Chennai and Kolkata; and two, Hyderabad, Mumbai, Delhi and Ahmedabad. Given its ward size, we are unable to compare Bangalore with any other megacity.⁵

In the first comparison, we find that Kolkata ($D=0.364$) is approximately 19.5% more segregated by caste than Chennai ($D=0.293$). One potential explanation for the lower level of residential segregation by caste in Chennai is the long history of successful lower caste social movements in Tamil Nadu, of which it is the capital. The Dravidian nationalist movement, also known as the Self-Respect Movement, originated in Tamil Nadu in 1925 and sought to end the oppression of lower castes by upper castes, particularly brahmins. For the comparison city, Kolkata, Chakroborty (2005) argues that the spatial segregation legacy of the colonial period has continued into the post-colonial city on several dimensions, including socio-economic status, caste and religion. Clark and Landes (2010) in a unique study utilising a large sample of 2.2 million surnames from the 2010 Kolkata voters' list find that brahmin castes cluster in the same postal codes, or residential space; thus pointing to a persistent role of caste in the spatial patterning of social groups in Kolkata.⁶

Within our second comparison group, we find that Ahmedabad ($D=0.325$) has the highest residential segregation by caste, followed closely by Delhi ($D=0.319$), while Mumbai ($D=0.222$) and Hyderabad ($D=0.194$) are considerably less segregated. In the case of Ahmedabad, a proposed study of inter-communal and inter-caste "ghettoism" suggests that "the city has grown into pockets of particular communities or castes" (Sapovadia 2007). Sapovadia further notes that distinct harijan (scs that experienced pre-independence untouchability) pockets can be identified in the city neighbourhoods of Behrampura, Bhudarpura, Asarwa, Jivraj Park and Asarwa. The city was the site of two significant caste conflicts in the 1980s, pointing to the uneasy nature of caste relations.

With respect to Delhi, Dupont (2004) provides useful insights into the reasons for prevailing caste segregation, especially pertaining to the scs. Although Dupont (2004) does not calculate a summary measure of segregation, she highlights the clustering of sc/st populations in various parts of Delhi by mapping ward-level 1991 Census data on the proportion of sc/st in each ward.⁷ The author puts forward two reasons for the expected high levels of caste-based segregation. First, harijan settlements in surrounding rural areas, where the out-castes were forced to live, have over time been incorporated into the city limits as Delhi's municipal boundaries have expanded. Second, the long-term slum resettlement efforts of the government aim to relocate people on the peripheries of the city (Dupont 2004), thus contributing to caste segregation

as the slums are often heavily populated by scs, including rural-urban migrants who are unable to find other affordable housing (Tsujita 2009).

Considering the remaining two cities in this group, Hyderabad ($D=0.194$) appears to be the least segregated and Mumbai ($D=0.222$) follows close on its heels. In the case of Mumbai, the relatively low level of caste segregation compared to Delhi could be due to the even spatial distribution of slums within the urban municipality. Takeuchi et al (2008: 68) argue that slum-dwellers in Mumbai are "considerably more integrated among non-slum dwellers than in other cities: 40% of slum-dwellers live in central Mumbai (zones 1-3)". The integrated nature of slum locations is likely to contribute to the city's relatively lower dissimilarity index.

Unlike other cities discussed so far, Hyderabad's population of Muslims is approximately triple the country's average and significantly larger than the comparison cities. In the case of Hyderabad, as in the other cities in this study, it would be interesting to calculate residential segregation by religion. We speculate that in Hyderabad religion is likely to be a more important axis of residential segregation. Unfortunately, we are unable to perform this analysis because census data on religion is made available at the district level, which does not allow us to analyse residential segregation within a city at ward level.

5 Conclusions

At the start of the 21st century, we find that caste still remains a real axis of urban residential segregation in India's seven largest metro cities. In each of these cities, our analysis finds residential segregation by caste to be sizeably larger than the level of segregation by socio-economic status. Caste has historically shaped the organisation of residential space, especially at the village level, and it appears to continue to do so in contemporary urban India.

Some limitations of this study are worth highlighting. As discussed earlier, the ward sizes in India's largest cities are quite large. Although the median ward size across India's seven largest cities varies – from approximately 25,000 to 70,000 people – they are large when compared to the median ward size in cities in other countries. The largeness of the ward size undoubtedly masks important micro-level segregation processes and trends at the intra-ward level. In addition, these processes are likely to differ across wards within the same city and across cities, making comparisons difficult. While in this sense the findings of this paper make only a small contribution towards understanding patterns of residential segregation, it is nonetheless an important precursor to highlighting the need for a more coherent research agenda that attempts to understand spatial inequality at the neighbourhood level. We hope that the tradition of neighbourhood studies and qualitative research in urban India will seek to fill in the gaps in our narrative.

Second, while much of the urban story of residential segregation by sc/st seems to overlap with the spatial configuration of slums in India's largest cities, we have not analysed data on slums in this paper. Our preliminary conclusions rely

on the contribution of past research, which finds a high correlation between the sc/st and slum populations in Indian cities. In the future, we hope to incorporate ward-level data on the slum population to test for this overlap. However, the finding that residential segregation by caste trumps over segregation by socio-economic status in each of the seven cities provides us some confidence that the mechanisms producing residential segregation by caste are a source of inequality worth being understood independently. Although faced with data limitations that prevent in-depth insights into the underlying mechanisms of caste segregation, we believe that this study provides important findings about stratification by caste in modern urban India.

Third, we would have liked to compare the change in residential segregation by caste over time for each city, as Mehta (1968, 1969) does in his studies on Pune. Modifications to the number and size of wards in each city between censuses make a longitudinal analysis of caste segregation using ward-level, aggregate data for each city nearly impossible. The one case in which existing census data may allow for a longitudinal analysis is if each newly created ward in a city is a subset of one, and only one, previous ward.

Fourth, alongside caste, residential segregation by religion is itself a separate and important area of examination. Future studies should attempt to undertake such investigation using survey data, given the aggregated nature of available data for religion in the census. For example, in Ahmedabad, while caste riots took place in the 1980s, Hindu-Muslim religious riots raised their ugly head more recently in 2002 (see Varshney 2002 for an analysis of communal conflicts in Indian cities). Similarly, as discussed above, analysing residential segregation by religion would improve our understanding of socio-spatial inequality in Hyderabad.

While many of the limitations of our studies are common across quantitative studies of residential segregation, several challenges relate to the restricted nature of publicly available census data. Unlike several other countries, the Indian government has been less forthcoming about making significant disaggregated data available from past census rounds. Avenues for making disaggregated data available, including samples of census micro data disaggregated at the household level, exist; such as IPUMS-International, an initiative by the University of Minnesota Population Center.⁸ At the very least, we encourage

the Indian government to make religion and more specific education data available at the ward level, particularly for older censuses, now that data for Census 2011 has been collected and will be available shortly. In addition, the development of secure data rooms where household-level data for key socio-economic and demographic variables could be made available for researchers at the ward or sub-ward level would greatly increase the depth and scope of our understanding of residential segregation in the urban Indian context.

Future Areas of Research

With regard to future areas of research, a comparative historical study of groups or pairs of cities would be a worthwhile exercise to better understand the mechanisms that lead to the observed patterns of segregation within and across cities. Such a historical perspective would also complement future efforts to collect primary data and find methods to improve the comparability of census or survey data across cities. Another extension of research on caste-based residential segregation could be the undertaking of housing audit studies, similar to those used by scholars in the US since the 1980s to document the discrimination in housing faced by African Americans (for example, Yinger 1986). A precedent for comparative understandings of social inequality based on the Indian caste system and of the US racial hierarchy goes as far back as early 20th century scholarship. While sociologists in the 1930s and 1940s attempted to substantively understand race relations in the US via the lens of caste discrimination (for example, Dollard 1937; Immerwahr 2007; Myrdal 1944; Sutherland 1942; Warner 1936), Indian studies on residential segregation by caste today would benefit from the methodological advances in studies of race stratification in the US. A successful transportation of such methods is seen in the volume edited by Thorat and Newman (2010), applied to the context of caste and religious discrimination in job-seeking in the corporate sector in India.

Finally, we intend to extend this analysis to study caste segregation in smaller Indian cities where global forces as well as urbanisation have been less pervasive. Another advantage of looking at smaller cities is that the ward size is generally smaller than big cities, thus rendering an even more meaningful measurement of spatial segregation. In doing so, we hope to be able to shed light on caste relations in India across different urban scales in the future.

NOTES

- 1 Mehta uses this term, which became widely used in the Indian bureaucracy during the colonial period, to refer to the most socially and economically disadvantaged castes.
- 2 The Indian Constitution specifies that "no person who professes a religion different from the Hindu, the Sikh or the Buddhist religion shall be deemed to be a member of a Scheduled Caste" (Government of India 1950).
- 3 We also replicated the analysis using all literate versus all illiterate population to ensure that the results using male literacy did not bias our comparison of socio-economic segregation with caste segregation. We find the comparative results are robust to either measure.

- 4 This result continues to hold even when we use a measure of literacy that includes both male and female populations of illiterate and literate individuals.
- 5 Bangalore's level of segregation cannot be compared to the other cities but a few comments about the city are in order. In 1991, the city of Bangalore had a population of 2.67 million people; 10 years later, the city's population had increased by 38% to 4.2 million (Government of India 2005; Nanda 1992). An additional component to Bangalore's growth has been the expansion of the city's geographic area. In 1991, the city of Bangalore had an area of 192 square kilometres; in 2001 the city's area was 226 sq km (Government of India 2001a, b). The additional land that was incorporated into the city

forms an uneven ring around the previous municipal boundary. The city's highly publicised rise in the global information economy and related growth in the information technology (IT) and biotechnology sectors have resulted in high levels of regional in-migration across socio-economic groups and an increased demand for new patterns of residential living and commercial land use (Patni 1999). For example, the growth of the IT sector, and the related increases in wages and in the number of high wage earners, has produced new demand for luxury apartments in the urban core and for gated suburban communities and industrial technology parks in the periphery. At the same time, the in-migration of individuals from rural areas to work in the booming construction and

other low-wage service industries is likely to change the dynamics in Bangalore's historically small slum population and rapidly urbanising peri-urban areas. The periphery of Bangalore has been a place where the "new demands of international capital and existing demands of local firms and populations" compete for land and resources (Keivani and Mattingly 2007).

- 6 West Bengal, the state in which Kolkata is located, is well known for its strong communist sympathies. However, in Kolkata, our calculations and existing research find relatively high levels of segregation both by caste and class (and ethnic group). With regard to class, residential segregation is not confined to the poor in Kolkata but also to clustering of the business elite, who are mainly prosperous entrepreneurs from Rajasthan who tend to live in the Burrabazaar or Park Street area; professional south Indians who tend to reside around the Lakes; and professional Bengalis who live in south Calcutta (Clark and Landes 2010).
- 7 Note that due to changes in the number and size of wards between Census 1991 and 2001 and again more recently, we are unable to do a comparative longitudinal analysis of caste segregation index across the cities.
- 8 "IPUMS-International is an effort to inventory, preserve, harmonise, and disseminate census microdata from around the world. The project has collected the world's largest archive of publicly available census samples. The data are coded and documented consistently across countries and over time to facilitate comparative research. IPUMS-International makes these data available to qualified researchers free of charge through a web dissemination system." See <https://international.ipums.org/international/>

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Survey

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Revisiting Communalism and Fundamentalism in India

by

Surya Prakash Upadhyay, Rowena Robinson

This comprehensive review of the literature on communalism – and its virulent offshoot, fundamentalism – in India considers the various perspectives from which the issue has sought to be understood, from precolonial and colonial times to the post-Independence period. The writings indicate that communalism is an outcome of the competitive aspirations of domination and counter-domination that began in colonial times. Cynical distortions of the democratic process and the politicisation of religion in the early decades of Independence intensified it. In recent years, economic liberalisation, the growth of opportunities and a multiplying middle class have further aggravated it. More alarmingly, since the 1980s, Hindu communalism has morphed into fundamentalism, with the Sangh parivar and its cultural politics of Hindutva playing ominous roles.

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