Spatial segregation in Vanarasi: caste and religion based exclusion/inclusion across municipal wards

Bikramaditya K. Choudhary*, Sachidanand Sinha and Md Jual Rana, New Delhi

Abstract

The social structure of the villages continues to be the reality of Indian towns and cities. Lewis Wirth's conception of 'urbanism as a way of life' is anything but applicable for most of the Indian cities, especially in the middle Ganga plain. The choice of residential property is largely and primarily determined by the primordial identities like religion, religion, caste and so on rather than economic returns and professional associations. Varanasi, oldest continuous settlement and a prominent town in the middle Ganga plain, is taken to study the extent of isolation and possible exclusion of different communities in the city. The present study analyzes existing articulation and continuous re-articulation of caste and religion-based spatial arrangements of residential blocks in the city of Varanasi. In the backdrop of the varied historic-socio-spatial evolution of urban centers in India, the study aims to explore the relationship between social differentiation and spatial segregation and its implications and connotations for the process of social exclusion.

Key Words: *Spatial segregation, exclusion, inclusion, caste, religion, dissimilarity index, isolation index.*

Introduction

Restructuring and polarizing have gradually become evident in cities of the global South during the entrepreneurial logic of the 1990s and post 1990s (Kipfer and Keil, 2002: 239). Several cities in India also adopted similar entrepreneurial strategies since the liberalization of the economy in 1991. In the last few decades, much research has been generated related to cities that explore several dominant issues: from the hierarchy of world cities (Beaverstock et. al., 2000) to the restructuring of urban space (Brenner and Theodore, 2002; Brenner 2004) to socio-spatial polarization (Madon, 1997) to the privatization and informalization of basic amenities like water-supply (Choudhary

2012; Wu and Malaluan, 2008) to the rise of neoliberal policy-making in different urban contexts including land deals (McDonald and Smith, 2004). Cities and the extended peripheries in post-1990s are developing informally especially the housing. This often creates spaces of exclusion or segregated housing complexes. The nature and causes of segregation are varied. The primary basis of such segregation includes caste, race, income, religion, etc. Social differentiation often leads to spatial segmentation of housing in both types of habitats, viz. rural and urban. While segmentation in rural areas was studied in 1960 and 1970s with the theoretical rubric of 'rural morphology'; the urban spatial segmentation came

under academic discourse post 'civil rights movement'. The conceptualization of racial residential segregation in cities can be said to begin the post Civil Rights movement of the 1960s in the United States of America. The concept got academic grounding with the works of theorists like Peach (1975), Darden (1986), Momeni (1986) and Galster (1988) and methodological developments like 'dissimilarity index' (Duncan 1955), 'isolation index' (Bell 1954; White 1986), 'segregation index' (Gorard *et al.*2003), 'entropy measure', 'spatial autocorrelation' and alike. Segregation continues to characterize the present urban lives across the globe, though the basis of segregation remains different. At places, the race is the primary basis of residential segregation, while at other places religion and caste play important role in residential segregation.

Segregation to some extent is the link to understanding the perpetuation of urban poverty. It is attributable to the present lack of affordable housing in safe and economically prosperous suburban communities. However, the idea of exclusive housing or to say Weberian kind of exclusion (Burchardt et al. 2002, Choudhary, 2013) in housing is also the basis of residential segregation often studied and theorized as 'gentrification'. In Indian city, it is this idea that forms the basis of residential segregation in cities like Varanasi. Two theoretical frameworks are applied in this paper on residential segmentation in the city of Varanasi. The segregation framework that has been used across the United States of America for analysis of housing segregation, particularly on racial line, provides a rich theoretical base for the study of residential segmentation (Peach

1975; Clark 1986; White 1986; Morrill 1995; Massey, 2001; Larsen and Hansen 2008). The use of gentrification in the study of residential segregation, where white population chooses to move out of a mixed neighborhood contributing to polarization further expanded the theoretical framework of such studies (Filion 1991; Atkinson, 2000; Walks and August, 2008; Walks and Maaranen, 2008; Murdie and Teixeira 2011). Social polarization of such kind when transposed with the economic restructuring of the urban spaces results in multiple types of spatial and social exclusions. The studies focusing on residential exclusion focuses rightly on the economic and social structures which produce excluded spaces and excluded communities or to say cultural exclusion (Kempen 1998; Bauder 2002; Johnston *et al.* 2005; Markham and Biddle 2016). Exclusion framework is important to apply especially when the ethnographic study is done as this framework allows the researcher to investigate the nature and causes of exclusion of a particular caste or religion in one small territory within any specific ward. This particular study is important as it deals with caste-based residential segregation in the city of the developing world. This is a little researched area because there has been no desegregated data available in the Indian Census before the 2011 Census. This particular study map segregation at the ward level within the city of Varanasi and also investigates the process of segmentation beyond the city limit, based on the ethnographic study[1]. The work in a way is backward tracing as it is part of the ongoing ethnographic study that prompts us to map segregation in this city of Varanasi at the ward level.

Housing segregation in the Indian city is the extension of rural housing patterns. Indian villages are known for their well-crafted caste-based segmentation. The Indian cities, which are contrary to the conceptual habitat based on rational human choice has shown continuity in terms of segmented housing. The neighborhood of large cities and towns grows slowly evolving sprawls and non-planned haphazard growth. Such sprawling outside the city limits which Larsen et al. (2007) call ex-urbanization are found to be more segregated in developing cities.

Varanasi: A site for inclusion/exclusion

The oldest continuous living urban habitat has attracted a monolithic religious perspective and in the process, the subversive imageries of the city have been subdued to a large extent. The monolithic identity of the city is predominantly associated with Hindu rituals of death. The city often called as the city of light (Eck 1998) or city of salvation (Parry 1994) remained the city of contestations and contradictions. The idea of salvation is linked to the eternal light which gets connected to the notion of *moskha*, i.e. escaping the cycle of rebirth. Banaras, Kashi, Varanasi, the three simultaneously used terms to identify one geographical space is just enough to set the background to explore the process of identity formation of the city (Choudhary, 2019). The city is known as the 'city of light', the 'city of deaths and rituals', the 'city of *thugs* (cheats)', the 'oldest living city', the 'city of salvation', the 'center of trade' during 4th to 18th century, the 'holy Hindu city', the 'most important and holy Buddhist place' and many more. In the 8th century, Acharya Shankar chose Banaras as a space to have a religious debate with the Buddhists who were dominant in the city of Banaras though, the city as a dominant Buddhist space, is almost absent from the mainstream text. Significantly, the oldest living city does not have a single building older than the 18th century (Singh, 1993). The city is said to house Hindu Brahmanical rituals but has had a strong legacy of anti-brahmanical tradition like that of Kabir and Ravidas. The city of Lord Shiva houses the Buddhist and Jain saints. The city boasts upon the celebrated performance of Ramlila and Ganga-*aarti* (a Hindu religious ritual of worship in which light, usually from a flame is offered to the holy River) but Kabir mela and Ravidas Jayanti is as important as Ramlila and Shivaratri festival. The city of Banaras thus provides a unique space of inclusivity. There seems more than a simple linear progression of this space located along the holy river of Ganga. Traditional urban spaces have been largely viewed from a singular perspective. The city of Banaras, the oldest continuous living urban habitat, has attracted a monolithic religious perspective and in the process, the subversive imageries of the city have been subdued to a large extent. This project emerged out of the concern the way traditional urban spaces have been viewed in the wider scholarship and has neglected persistent segregation and segmentation of certain sections of population like the Dalits[1] and the Muslims.

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1. There are debates and controversies on the use of the term *Dalit* in academic writings. *Dalits* are congregations of communities identified as Scheduled Caste in Indian official documents. They were also known as *Harijans* during the freedom struggle and Gandhian 'purification' movements, which had the aim to include *Dalits* in the mainstream Hindu rituals especially those who observe "purification". Ambedkar called them *Dalits* and the majority of them are comfortable with this usage in academic writings.

Although the city has changed over a period of time and the city has continuously evolved itself incorporating all these changes, yet the popular image of Banaras continues to maintain its hegemonic Hindu religious identity despite the plurality of traditions and populations. This also means consistency in the residential pattern which has a conspicuous congregation of caste-based communities and religious minorities across the city-space.

Data and Method

The study is based on data from the Indian Census, 2011. Provisional data of socio-economic and caste census of 2011 round (first of its kind) contains information on population and housing for the city and its sub-area such as wards. In this paper, we measure residential segregation at ward level amongst three identified communities, the Muslims, *Dalits,* and All others. All others for this study include people from the upper caste, middle caste and a small proportion of Scheduled tribes, Christians, Jains, and Sikhs. Selecting these three communities as units of analysis has proved a useful purpose of using the measure of geographical inequality like 'ternary diagram' (Plewe and Bagchi-Sen 2001; Hamilton, 2017). The measures like dissimilarity index (Duncan 1955), isolation index (Bell 1954), entropy measure, index of net difference (Timberlake 2002) are good statistical measures which can be applied for measuring segregation and stratification between two or more groups; while 'ternary diagram' can be applied to visualize geographical inequality in housing. This is the reason, in this analysis, both kinds of analysis are done. It is used to show the overall distribution of a population with reference to a particular sub-group (here *Dalits and Muslims*) of that population and then a comparative visualization through a ternary diagram for all three groups.

The most common measure of residential segregation is the dissimilarity index (Duncan and Duncan, 1955), which summarizes the degree to which geographic subunits, such as wards, reflect the demographic balance of a larger entity like a city or a metropolitan area. The value of dissimilarity index (DI) ranges from 'zero' to 'one'; the higher value of DI indicates more segregated communities. In this paper, we use (DI) to measure residential segregation. Usually, DI is used to measure residential segregation in the context of race and is defined as the separation of racial groups in urban space. Here caste and religious groups which are mutually exclusive, form the categories. Three mutually exclusive groups viz. Muslims, *Dalit* (Scheduled Caste) and others (includes upper caste and middle caste) are considered. We also use an index of net difference (Timberlake 2002; Kato 2006) to capture the stratification between these groups by calculating the difference between probabilities of the member of a group (*Dalit*) living in higher ranking ward than a member of other two groups. Wards are ranked on the basis of infrastructure available and the proportion of good housing available. What or who is segregated can be conceptualized in diametrically opposite ways. Imagine a city with a total Black inner city and a totally White surrounding area with no overlap of groups it can be agreed that the groups and the inner and outer city are totally segregated. The same can be seen and analysed with reference groups being Scheduled Caste and Muslims and

others in the case of Banaras. Relaxing the distributions, so that the white population is evenly distributed across the city, including the Black inner city it could be argued (1) the White population is un-segregated because it is found everywhere, but the Black population is segregated because it is confined to the inner city; (2) the Black population is integrated while the White population is segregated because the Black population lives in a completely mixed inner city while the White population is largely segregated in Whites-only suburbs; (3) the inner city is segregated because all Blacks live there and are absent from the suburbs; (4) the inner city is not segregated because it has a mixed population. How segregation is conceptualized is important because indexes are operationalised from the concept. No single index can represent all aspects of unevenness which constitutes the central attribute of segregation. When there are more than two groups, the analysis is more complex. This is why we have analyzed the segregation as binary, means SC and non-SC and Muslim and Non-Muslims.

A 'ternary plot' graphically depicts the proportion of the three variables as positions presented in an equilateral triangle. Here one point represents a ward. The three variables namely General, Muslims, and SC-ST which constitute the total number of households in a ward of the city of Banaras are taken into analysis. The number of households has converted into percentage and presented in the ternary plots. A weighted ternary diagram has been prepared wherein a dot is weighted with another variable. In our diagram, the number of total households in the wards have been weighted and presented in size accordingly. The 'geom_point_

swap' geometry of the 'ggtern' package allows generating scatter plots in the 'R' environment. This geometry also allows weightage with other variables (Hamilton, 2017). In the 'ggtern', the 'geom_density_tern' makes a contour using two dimensional kernel density estimation which shows the density of concentration or dispersion of points in the plots (Hamilton, 2017).

Spatial Distribution of households by Socio-religious Groups

The socio-religious distribution of the households in Varanasi city is highly scattered. Overall, the share of the households by Hindu-General, Muslims, SC, and ST are 60%, 30%, 9%, and 1% respectively in Varanasi city. Figures 1-4 present the spatial distribution of households by a socio-religious composition by wards.

Figure 1 presents the spatial distribution of Hindu-General households by wards in Varanasi. Several clusters of densely Hindu-General households were observed. One major cluster is found around the ward number 83 along with the river Ganga comprising the wards number 41, 62, 63 and 64 which have more than 80% Hindu-General household. Another bunch of wards is spacious southern-western part of Varanasi which includes ward numbers 8, 10, 28, 54, 12, 77, 53, 31, 40 and 60. Share of the Hindu-General households is relatively smaller in the central and northern wards of Varanasi particularly ward number 23, 46, 56, 50, 71, 81, 82, 84, 85, 86, 88, 89 in the northern region and 68, 70, 73 and 90 in the central region. These wards have less than 30% of Hindu-General households.

The spatial distribution of the Muslims households by wards is presented in Figure 2. Two major clusters of wards are easily identifiable where the majority of households (>63%) consist of Muslims. Muslim majority wards are centralised in the heart of the city which comprises the wards number 23, 50, 56, 46, 47, 71, 81, 82, 84, 85, 86, 87, 87, 88, 89. Another group of wards is located in the center of the city which encircles ward numbers 68, 73 and 90. The spatial distribution of Muslim households in the heart of the city implies that these residential areas are very old in the 'city of Shiva' (One of the Hindu's God). However in the central region, in the wards along the Ganga river, particularly 48, 63, 83 and 74, the percentage of Muslim households is very low if not negligible (<7%). Besides, the share of Muslim households in the Southern and Western wards of the city (viz. 8, 10, 28, 54, 12, 31, 44, 53 and 60) is also insignificant.

Figure 3 shows the spatial distribution of SC households by quintile group of wards. The figure shows that a high proportion of SCs households is found in the outer wards of Varanasi as compared to the central wards. In particular, their share is relatively high (>12%) in the northern wards of the city namely 1, 3, 4, 5, 6, 7, 11, 16, 23 and 27. In some of the wards in the central and western regions, mainly ward numbers 9, 17, 43 and 44, the distribution of the SC household is relatively high. In the wards of the central region of the city particularly 61, 63, 68, 37, 46, 50, 56, 81, 84 and 88, the proportion of SC household is rather negligible (<3%).

Across the wards of the city, the share of ST households is insignificant in the total household (Fig. 4). Although the proportion of ST households is higher in the outer wards of the city compared to the centre, the distribution is rather scattered. In particular, the wards with relatively higher percentage of ST households (>1%) are found in northern (i.e. ward number 16, 23, and 34), central (i.e. ward number 35, 48, 51 and 78) and southern (i.e. ward number 2, 12, 38, 8, 10 and 39) regions.

Residential Segregation in Varanasi

The ternary plot (Fig.5) shows the composition of General, Muslims and SCs/STs households across the wards of Varanasi Municipal Corporation weighted with the size of the households. The graph demonstrates that overall, the social composition of the households in the wards is uneven as the concentration of the wards is mostly found in a corner of the plot. In most of the wards, the share of General, Muslims, and SCs/STs are >40%, <50% and <40% respectively. The largest number of wards with regard to the number of households was found in areas with a higher concentration of General households and a lower share of Muslims barring some exceptions.

Figure 6 shows the concentration density of wards along with the distribution of social composition. The concentration of wards is found in a corner of the ternary plot. Altogether three groups can be identified from the figure. The first set of wards can be found alongside the base of the pyramid showing a high percentage of General households and a low percentage of Muslims. The second group can be observed alongside the left axis of the triangle characterised by a high share of General and a small proportion of SCs/STs. The third set of wards is those who are sparsely distributed having moderate-high Muslims
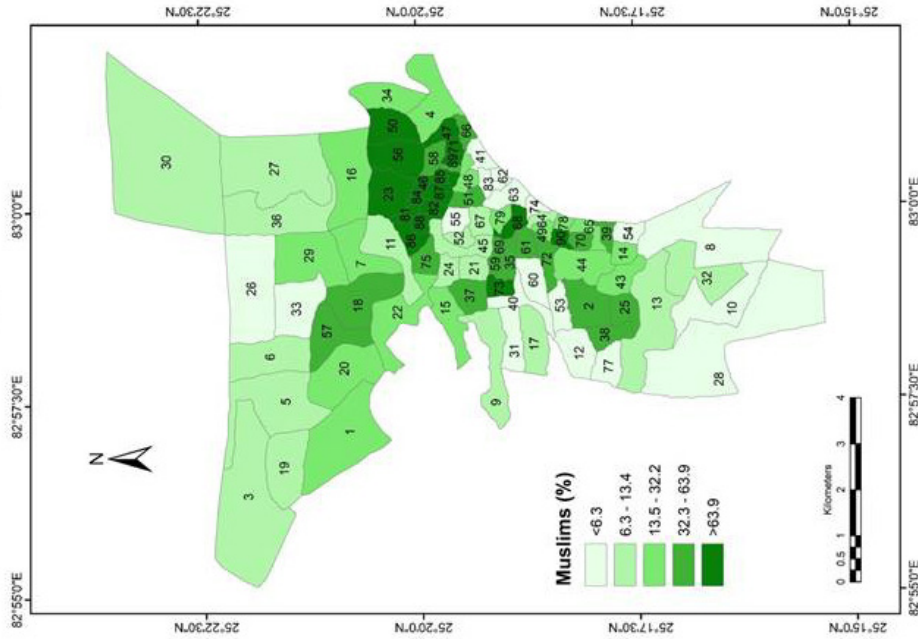
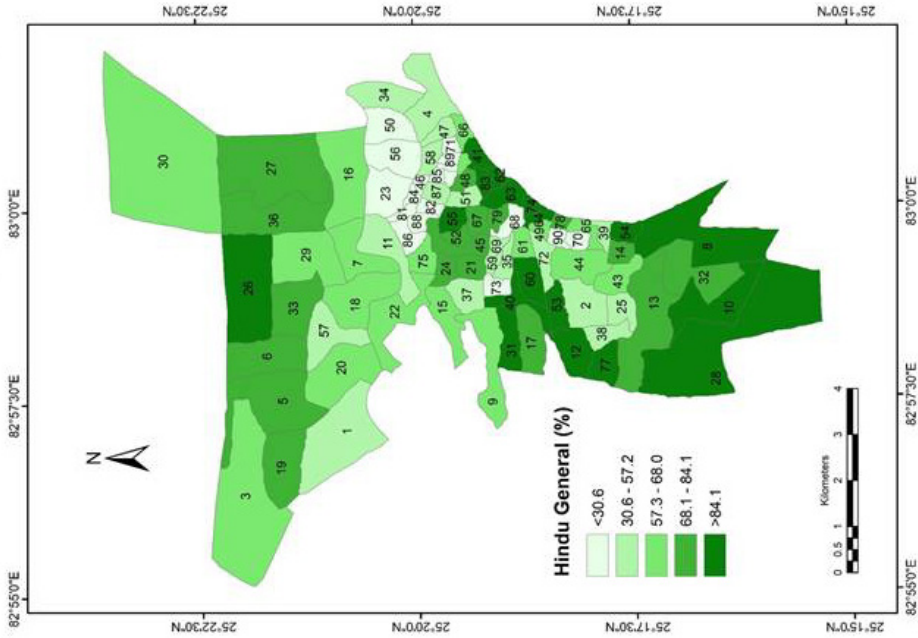Fig. 2: Percentage of Muslim population in Varanasi city

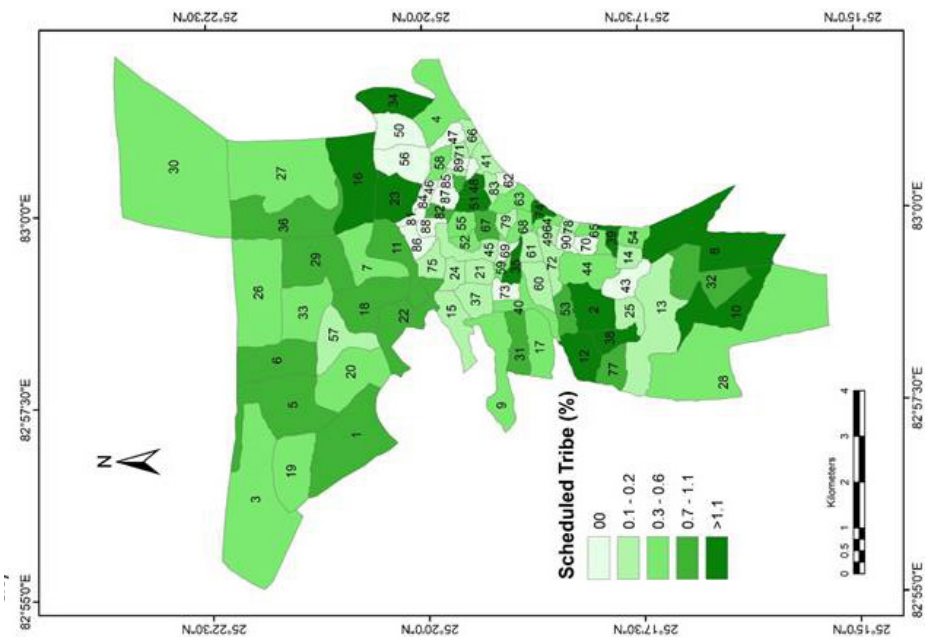Fig.1: Percentage Hindu-General population in Varanasi city

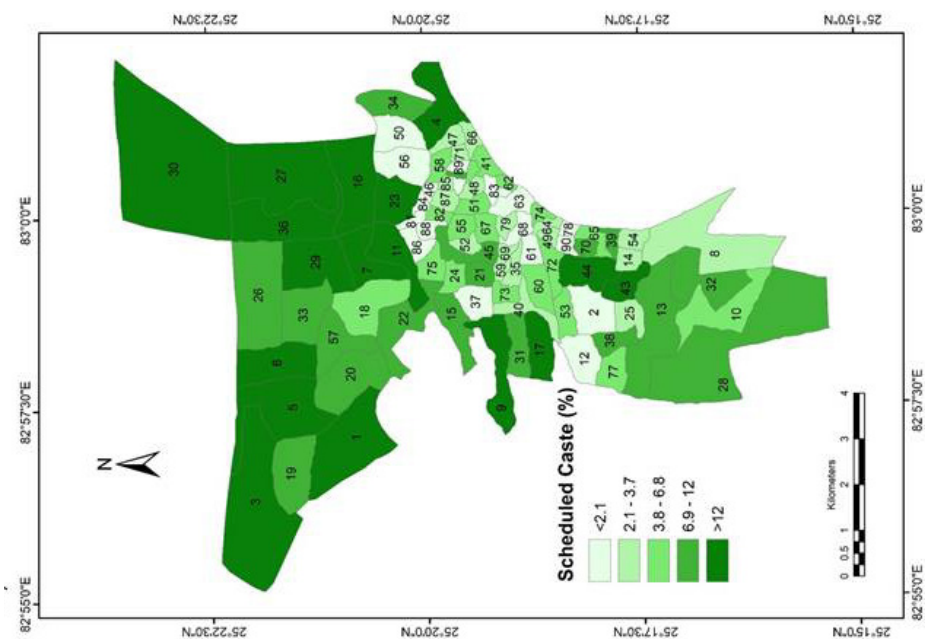Fig. 4: Percentage of Scheduled Tribe (ST) population in Varanasi city

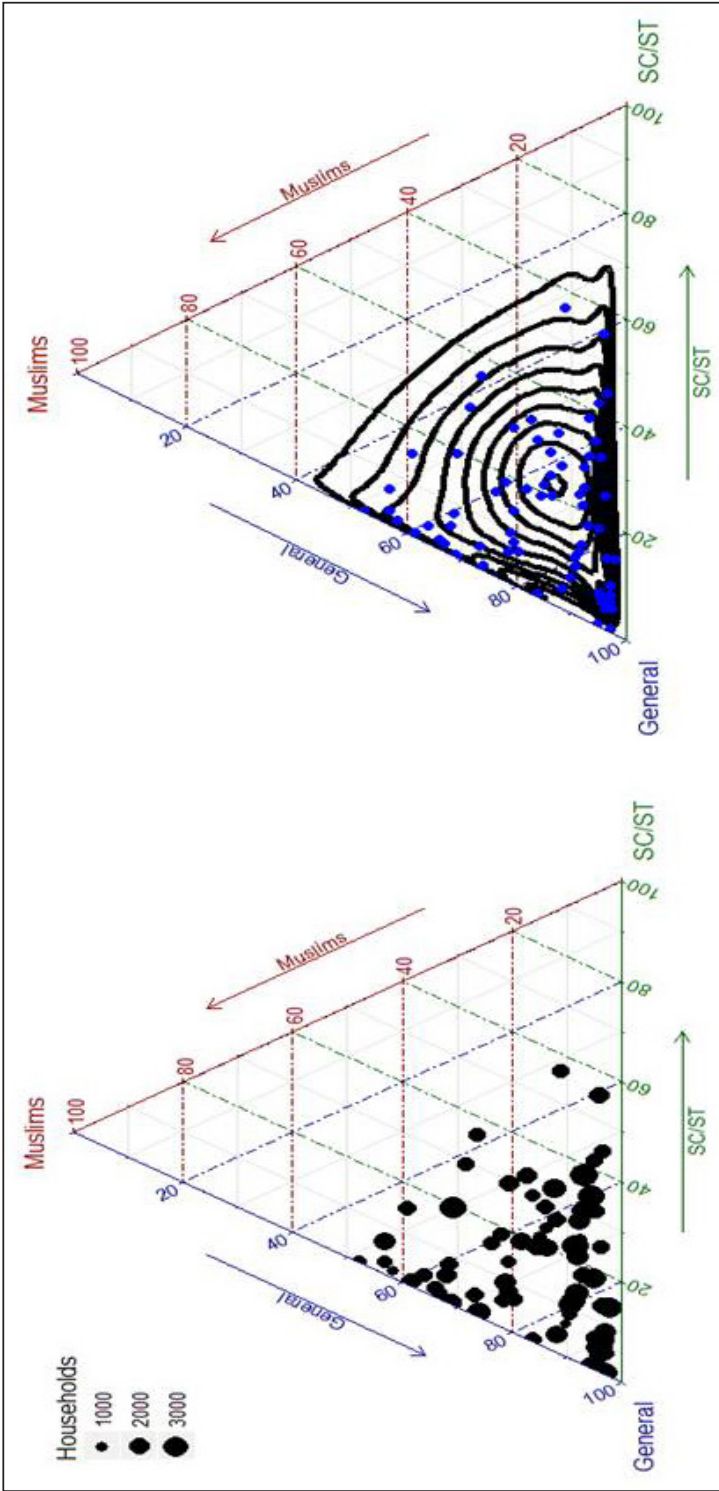Fig 3: Percentage of Scheduled Caste (SC) population in Varanasi city

Fig. 6: Weighted ternary density plot showing the General, Muslims and SC/ST population

Fig. 5: Weighted ternary plot showing the General, Muslims and SC/ST population in Varanasi
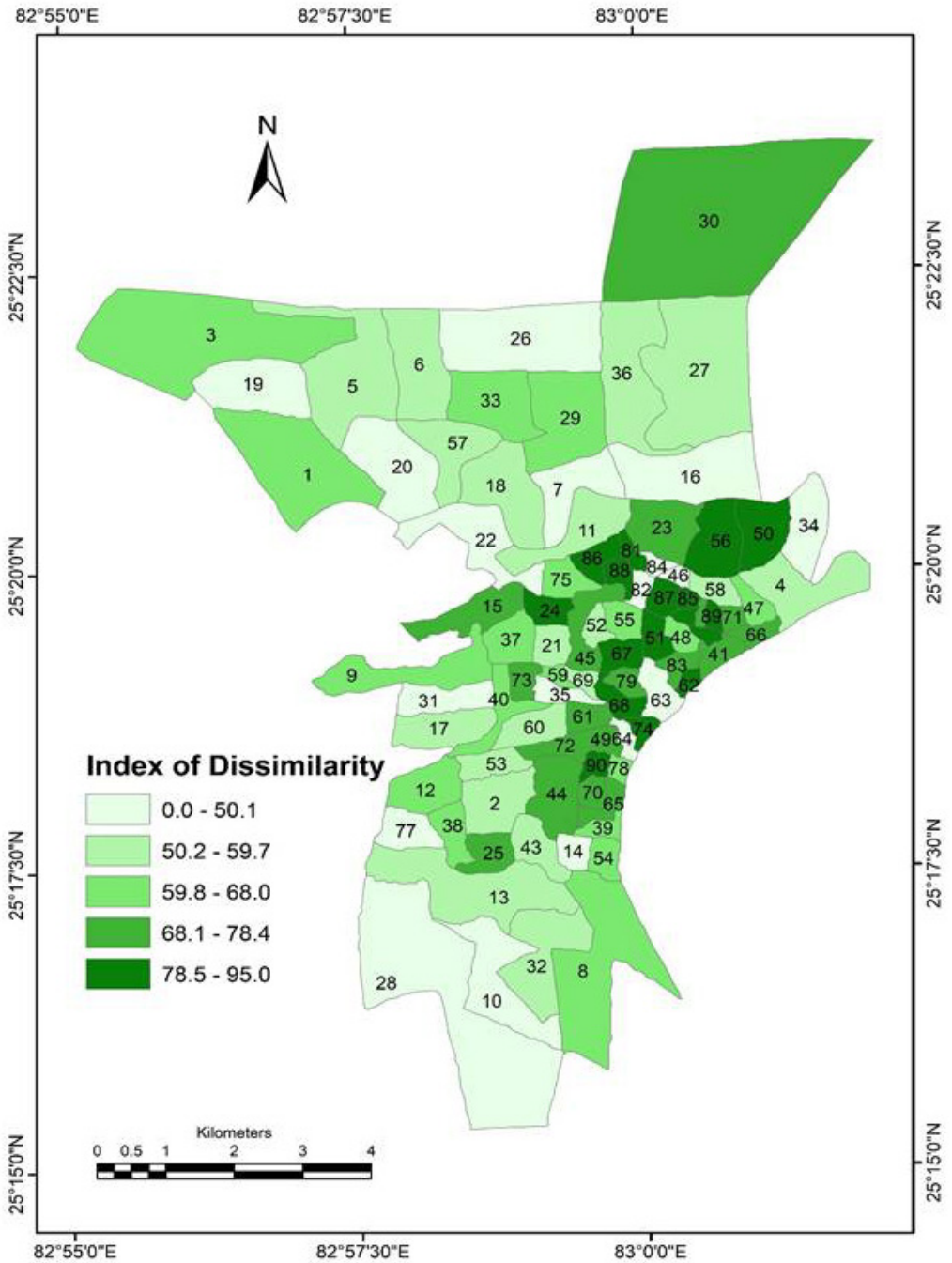
Fig. 7: Varanasi-Index of dissimilarity of SC/ST households using data from enumeration blocks

and SCs/STs households and relatively low General households.

The dissimilarity index at the aggregate level suggests that about 36%, 53% and 56% of households of SC, ST, and Muslims respectively have to be redistributed for evenness in the composition Hindu-General households across the wards [Results not mentioned in the table]. Because ward level data is insufficient to present the inter-wards differentials in terms of residential segregation, enumeration block level information is used for ward level estimation of the segregation index. Due to the unavailability of identifications of Muslims households, the ward level segregation for Muslim is not possible. The number of SC and ST households for each enumeration blocks were merged because many enumeration blocks do not have ST residence.

Figure 7 presents the distribution of the dissimilarity index of SCs/STs against the General (including Muslims) for each of the wards in the city of Varanasi. The central wards of Varanasi have the most segregated spaces in the city that can be easily visible from the map. In particular, the ward number 24, 50, 51, 56, 62, 67, 68, 74, 81, 85, 86, 87, 88, 89, 62 and 90 have the highest dissimilarity index (>78%). On the contrary, the outer wards particularly 7, 10, 16, 19, 22, 26, 28, 34, 63, 64 and 77 have the lowest dissimilarity (<50%). The mapping of wards suggests the wards in the central region of the city have a higher level of segregation than the outer wards, where planned housing was done during the 1970s and 1980s.

Table 1: Distribution of Wards by the Indices of Dissimilarity and Isolation

Index of dissimilarity for SC/ST		Isolation index			
		General		SC/ST	
Range	Number of wards	Range	Number of wards	Range	Number of wards
<50	15	<3	7	<3	11
50.1 - 60	21	3.1 - 4	25	3.1 - 4	27
60.1 - 70	19	4.1 - 5	26	4.1 - 5	20
70.1 - 80	19	5.1 - 6	18	5.1 - 6	10
>80	14	>6	14	>6	19

The wards spreading in sprawls have a fairly high level of segregation, as individual decision remains paramount. *Dalits* are found concentrated in certain wards. It is noticed that these wards at some point of time remained on the outside geography of the city. As the city expands, so the housing of these communities got incorporated within the city limits. The ternary diagram clearly shows a concentrated pattern of housing. About 20 percent of wards (i.e. ward no. 2 and 8) are conspicuous as they only have 2 percent of SC population. About 10 percent of the wards report the majority of Scheduled caste population i.e. wards number 8 where about 48 percent of SC

population and 4 percent of ST population live. The analysis of a mental map of the immigrants in relation to their willingness to be incorporated or excluded from the composite urban social milieu suggests that they are more comfortable amidst their own people.[2] The colonizers while selling the plot of land ensures that they do not entertain people belonging to Scheduled Caste and Muslims. The rationale of such exclusionary thought was that this brings down the price of land in their colonies and their profit would go down and also the other buyers would complain. This suggests that a systematic mindset is created that excludes a section of society from the upcoming residential colonies and high-rise multi-story buildings. This tendency cannot be generalised for the entire Banaras, but in the selected study area (consisting of about 500 households) the exclusionary segmentation does prevail.

Conclusions

Spatial segregation in cities impedes the entire process of economic rationalization with sustainable and environmental opportunities. Cities and the extended peripheries are developing in an informal manner as far as housing is concerned. The nature and causes of segregation varies though. There is a combination of factors like, caste, income, religion, language, and place of origin which has created a segregated urban community in the city of Banaras. The present study found existing articulation and continuous re-articulation of caste based spatial segregation in the city of Varanasi and its sprawl. In the backdrop of the varied historic-socio-spatial evolution of urban centre in India, the study establishes the relationship between social differentiation and spatial segregation and its influence on the process of social exclusion.

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2. The analysis of own people here means people from the same linguistic-cultural background.

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Bikramaditya K Choudhary*
Sachidanand Sinha
Md Jual Rana
Centre for the Study of Regional Development
Jawaharlal Nehru University
New Delhi 110067
*E-mail: bkcjnu@gmail.com