Neighbourhood Characteristics and Residential Satisfaction: A Study of Greater Mumbai City

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Abstract

This study assesses the level of residential satisfaction and its major determinants in different housing typologies of Greater Mumbai City using primary data collected from 450 households in five different housing typologies (i.e., high-rise buildings, old colonies, chawls, slums and slum-rehabilitated buildings). For analysis of data, Bi-virate tables, One-way ANOVA test, Pearson correlation and OLS regression were done. Results indicate that despite being proximate to one another, the housing typologies have different levels of satisfaction with their dwellings. Slum and chawl neighbourhood shows low residential satisfaction compared with other housing types. The OLS regression exhibits that duration of residence, family type, household ownership and household congestion are significant determining factors for residential satisfaction. Housing development should direct the designing of houses to culturally fit for the community people living in them. The study recommends finding out more ways to make dwelling places, especially slums, Slum rehabilitated houses and chawls more satisfying for sustainable development.

Keywords: Built environment, housing, neighbourhood, residential satisfaction.

I. Introduction

Housing is not just a dwelling unit but also, one of the basic human needs. In the house interaction of dwellers characteristics (i.e., socio-economic) with physical attributes of house creates a 'housing system' (Francescato et al., 1987). In this system, interaction occurs in two ways; housing physical aesthetic aspect influences the socioeconomic construct of the dwellers and gets affected vice-versa. Hence, the house considered as a locus of socio-cultural growth of human society on which development of any nation relies (Abdu & Hashim, 2014). During early 1960, concomitant housing growth in the suburban part of western countries stimulated the studies on residential development and living pattern (Brookfield, 2017). Later, in 1976, the United Nations recognized housing as a significant factor for the assessment of human development and societal civilization (U.N.O, 1976). Besides, several other empirical studies underline its importance as housing design or typology that perfectly reflect the prevailing social system, manifested level of development and degree of civilization (Dhingra et al., 2016; Handmer & Dovers, 1996; Mowla, 1999).

The conceptualization of satisfaction drawn from the house is complex because it is formulated based on two different terminologies (i.e., House & Satisfaction). Therefore, the concept of residential satisfaction has lot many definitions depending on the context it occurs (Jiboye, 2009; Mohit & Azim, 2012). Some tried to define it by one dimension and some by multiple - dimensional perspectives (Abdu & Hashim, 2014). For example, Onibokun defined residential satisfaction as a

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spatial aspect - housing satisfaction includes satisfaction with the housing unit and with the neighbourhood and area (Onibokun, 1974). Satsangi and Kearns define residential satisfaction as a psychological aspect- housing satisfaction is a complicated attitude (Satsangi & Kearns, 1992).

On the other hand, many writers seek to establish residential satisfaction based on both factors: residential environment and individual characteristics (Adriaanse, 2007; Loo, 1986). These factors comprises indicators such as length of residence, tenure status, physical characteristics of the house and neighbourhood, social bonding, and socio-demographic characteristics of the residents (Adriaanse, 2007). However, McCray and Day have defined the degree of residential satisfaction experienced by an individual or a family member concerning the current housing situation (McCray & Day, 1977).

The WHO report entitled *Healthy housing* accepted the vital association of housing and its built environment that has a profound effect on human health in many dimensions (i.e., reduction of diseases, increase in the quality of life, mitigation of poverty and reduced climate change) (WHO, 2018). The design and quality of housing structures can either increase or decrease health risk exposure (Giles-Corti et al., 2016). Similarly, neighbourhood design affects access to water and sanitation systems, safe walking and cycling networks and spaces for social gathering, recreation and physical activity and more (Lavin et al., 2006). The return of prominent, attractive staircases may encourage people to exercise with resulting health benefits (Frumkin, 2003). Hence, to improve housing conditions worldwide, the United Nation set the agenda under Sustainable Development Goals, as *good health and wellbeing* (SDG 3) and *sustainable cities* (SDG 11) (United Nations, 2019). These agenda help to strengthen the on-going housing satisfaction problem related to several programmes in a time-bound manner. Moreover, it is a major entry point for inter-sectoral public health programmes (WHO, 2018).

The dictates of current urban life and development of new building structures, coupled with the emerging globalization that facilitates cultural interaction with other societies, has influenced urban house types in developing countries including India. Consequently, the majority of urban households lack originality and spatial relevance for occupants (Jiboye & Ogunshakin, 2010). Besides, they reveal functional inadequacies and generally degraded environment in the form of slums and squatter habitats (Jiboye, 2010). Likewise, few neighbourhoods are considered more problematic than others due to their physical attributes (Adriaanse, 2007). Residential environments can be typified by objective criteria such as building period, architectural style, spatial structure, amount of green space and geographic location. The allocation of neighbourhood characteristics is not generally disputed (Adriaanse, 2007). Nevertheless, there are differences in the way residents perceive and use their environments. It is conceptualized as the difference between the household's actual and expected or preferred satisfaction (Phillips et al., 2005).

Consider it in Indian cities, especially Mumbai which is a hub of financial and formal commercial activity. Consequently, it attracts massive migration from other parts of the country. It entails a predominantly mixed land use including residential, commercial and office uses. Residential land use takes into account the wide range of housing typologies in use from big apartments of single-family to chawls and slums which have overcrowd (ET, 2019; Shetty et al., 2007). Mumbai's urbanization, like most India's urban cities, has been haphazard. Its long history of settlement creates several types of a settled neighbourhood on which the quest of dwellers for suitable or desired housing structure has continued. Currently, Mumbai's precincts display an extremely disharmonious urban form. Keeping in mind the diverse characteristics and nature of the city, it has been chosen to examine the level of residential satisfaction in the various housing typology/neighbourhoods and to assess the major determinants of residential satisfaction.

II. Data

Study location

For convenience three areas, i.e., Bandra, Dadar and Chembur selected from three different zones of Mumbai for study (refer Figure 1). Initially it was planned study them ward-wise but Brihanmumbai Municipal Corporation (BMC) has always redrawn and reshuffled the administrative boundaries of wards before the civic elections to ensure the desired population size in all the wards. While redrawing the boundaries many times that the same area may be converted into two different wards, e.g., the iconic five gardens at Matunga split across two wards F (North) and F (South). Sometimes the area changes from one ward to another. For instance, earlier ward G (North) consisted of Mahim, Matunga and Dadar west part. Then Matunga was bisected from G ward (North) and formed separately as F ward (North). Considering frequent boundary changes and complexities related to then, the present study has taken the area as a whole irrespective of administrative boundaries.

Further, for convenience, we fixed a landmark (i.e., Government hospital) in each selected area from there. We created a buffer zone of 5 km aerial distance to collect the desired sample. The collection of samples was done from different identical (in-terms of built forms and socio-economic aspects) localities as High-Rise Building Houses (HRBHs), Old Colonies Houses (OCHs), Chawl Houses (CHs), Slum Houses (SHs) and Slum Rehabilitated Houses (SRHs).

Sample group

For the collection of data, using multilevel sampling technique at the first level, we fixed a quota of 90 household samples from each locality. Likewise, from each study area a total 150 samples and in it 450 samples were collected. The fixing of sample quota helps to avoid the non-response particularly from a high-rise building houses and old colonies houses. At the second level, we used a random selection of households from a sampling frame of the different locality (Figure 2).

Data collection and processing

The concurrent mixed method of data collection was opted. For the collection of quantitative data, we formulated a standard questionnaire. The survey instrument was pretested with 30 household samples to check its suitability. After necessary modifications (i.e., accuracy, consistency and completeness) in the questionnaire, pretesting data collection exercise was performed from January to June, 2016 by the first author. After the completion of the fieldwork and the necessary data checks to ensure quality, the data was entered in the CSPro 6.3 (Census and Survey Processing System) database, which has been developed and is supported by the U.S. Census Bureau and ICF Macro.

For qualitative information, Key Informants (KIs) and In-Depth Interviews (IDIs) were conducted from different stakeholders (local administrative officers and school teachers). Issues related to likes and dislikes of the locality, interaction spaces of the residents and further improvement required by the dwellers in their neighbourhood were captured.

Selection of respondents

Respondents for the study have been selected with two criteria. Firstly, respondents should be residents in the area for at least five years preceding the date of the survey. Secondly, they should be heads of the households (either male or female). In the absence case of the head, the respondent should be a major (18+ years) and a close family member.

III. Methods

A. Measurement of Residential Satisfaction

Study of the concept of housing satisfaction or residential satisfaction has gained attention in recent decades as an interdisciplinary research. The assessment of residential satisfaction is significant to successfully plan and execute housing policies for housing planners (Galster & Hesser,

1981). Dissatisfaction with housing leads families to relocate their housing (Rossi, 1955), suffer from mental stress and depression (Liu et al., 2018; Schwirian & Schwirian, 1993) and infectious diseases (Yadav et al., 2016). The drawn satisfaction from the house by users/dwellers measures the value of living. In this context, Ibem and his partners asserted that satisfaction is a subjective assessment of the performance of products or services in meeting the needs and expectations of users or customers (Ibem et. al., 2013). Moreover, many researchers argue that evaluation of physical attributes of the residential environment is converted into subjective information and these attributes
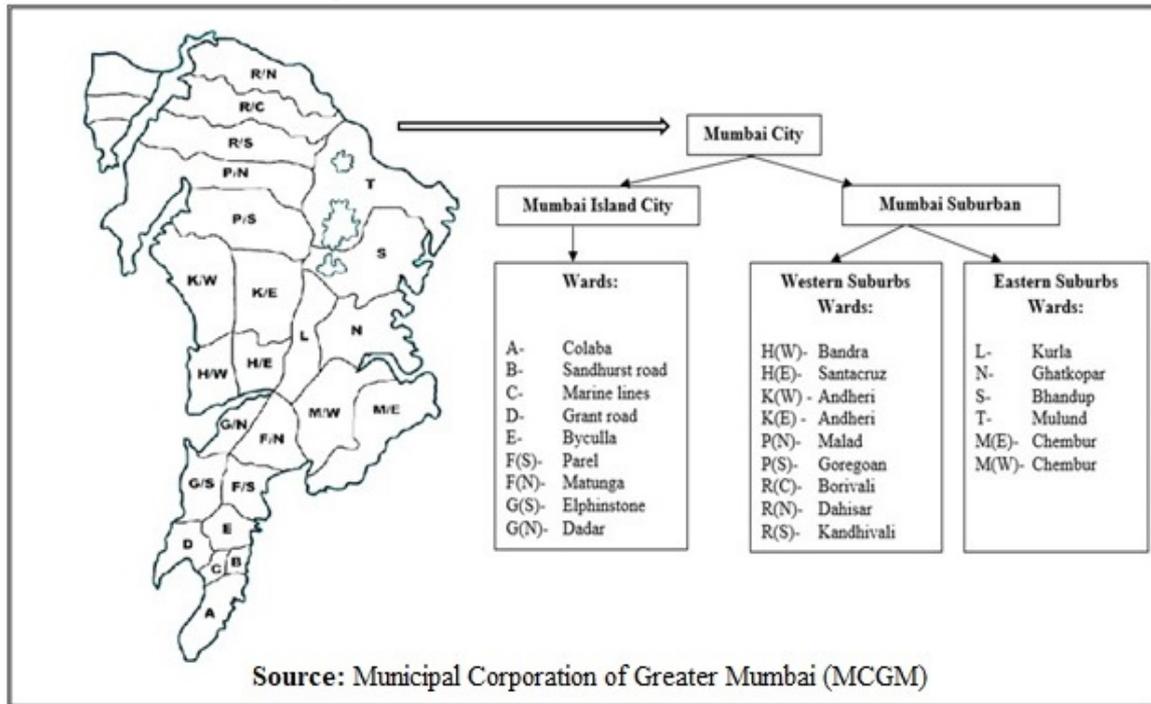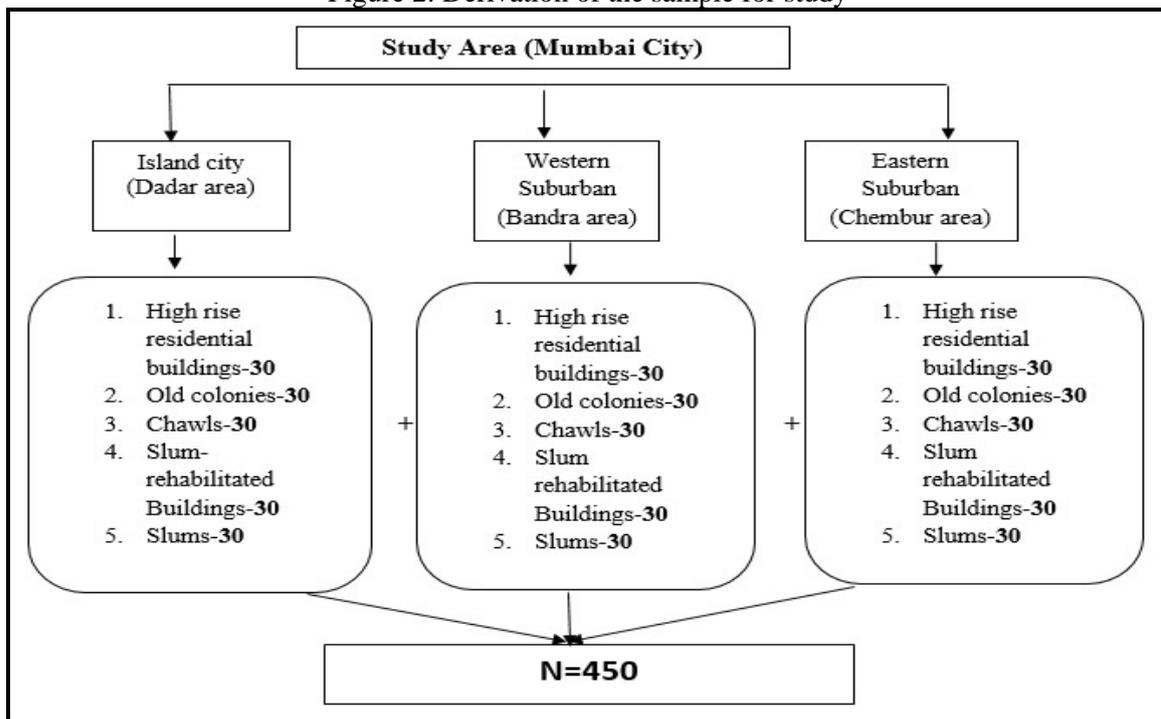
Figure 1: Administrative divisions of Mumbai

Source: Municipal Corporation of Greater Mumbai (MCGM)

Figure 2: Derivation of the sample for study

also give a certain degree of satisfaction (Amerigo, 2002; Amerigo & Aragones, 1997; Amérigo & Aragonés, 1990). Personal characteristics of the respondents influence these subjective attributes. Besides, the subjective attributes are influenced by residential quality pattern (Adriaanse, 2007). To achieve the measures of residential satisfaction, several empirical attempts have been made. In this context, Riazi & Emami, (2018) found huge variation among previous studies from the macro-level to the micro-level (i.e., neighbourhood vs dwelling) or based on dimensions (i.e., objective vs subjective or physical vs social).

Opinion of residents provides important insights and sheds light on housing aspects which have a significant impact on overall residential satisfaction. Canter & Rees (1982) explained it by three components of residential satisfaction, namely, neighbourhood, house and neighbours. Their assessment relies on three fundamental and interrelated human capacities such as affective, conation, and cognition (Francescato et. al., 1989).

B. Construction of response variables

For the present study, we also measured the level of satisfaction of the respondents on selected themes as neighbourhood, house and neighbours. To construct indices, variables have been selected carefully. Their description is given below:

Housing quality satisfaction scale (HQS): It comprises housing infrastructure-related indicators on respondent derived satisfaction. The selection of indicators (i.e., house age less than 30 years, cemented floor, roof and wall, access to toilet facility within the home, separate kitchen room in a house, drinking tap water facility, proper garbage disposal and availability of parking space) is influenced with previous studies (Jiboye, 2014; Zanuzdana et al., 2013).

Neighbourhood Environmental and Walkability satisfaction scale (NEWSS): The selected indicator for this indices has been categorised in two forms: first, availability of urban facilities[5] and secondly, access to the urban facility within 500 meters. The authors set this distance criterion as per the suitability of local conditions, instead of an acceptable threshold for walking to local facilities, which varies between 200 to 800 meters (Barton et. al., 2003; Brookfield, 2017). The selected urban services within 500 meters' zone are such as a bank, bus stop, hospital, religious place, community centre, education centre, communication centre, vegetable market, milk shop, grocery shop, fast food centre, cloth shop, etc.

Neighbour satisfaction Scale (NSS): It is derived from selected indicators which are influenced by previous studies (Adriaanse, 2007; Karuppannan & Sivam, 2011) and the selected indicators show how well you know your friends/ neighbours. Whether the people in your neighbourhood are reliable and trustworthy? Whether having close and faithful friends? What do you feel, in an urgent situation, your neighbours will come?

Conceptual framework: The study is based on conceptualization (Figure 3) that socio-demographic characteristics influence residential satisfaction through overall residential environmental satisfaction. The overall residential satisfaction was measured through three aspects: housing quality, neighbourhood environment and walkability satisfaction, and neighbours' satisfaction.

Table 1 shows the reliability analysis of different scales which are constructed to measure the satisfaction level of dwellers. The standard Alpha Cronbach's value (internal consistency coefficient) of all the common factors are more than 0.7, indicating that the reliability of the data is high and the common factors are explained well by the selected variables for scales.

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[5] Urban facilities include access to open space (includes playgrounds and parks), stay in a noisy or calm zone (noise may be from traffic, social events, construction household chores, industry or fighting, etc.), filthy or foul smell area (may be from the gutter, garbage peaks or chemical industries or other sources) and boundary wall, safe and secure locality, easy access of emergency services (ambulance and fire brigade), friendly roads to walk and defined footpath).

Figure 3: Conceptual framework showing linkages between background characteristics and residential satisfaction
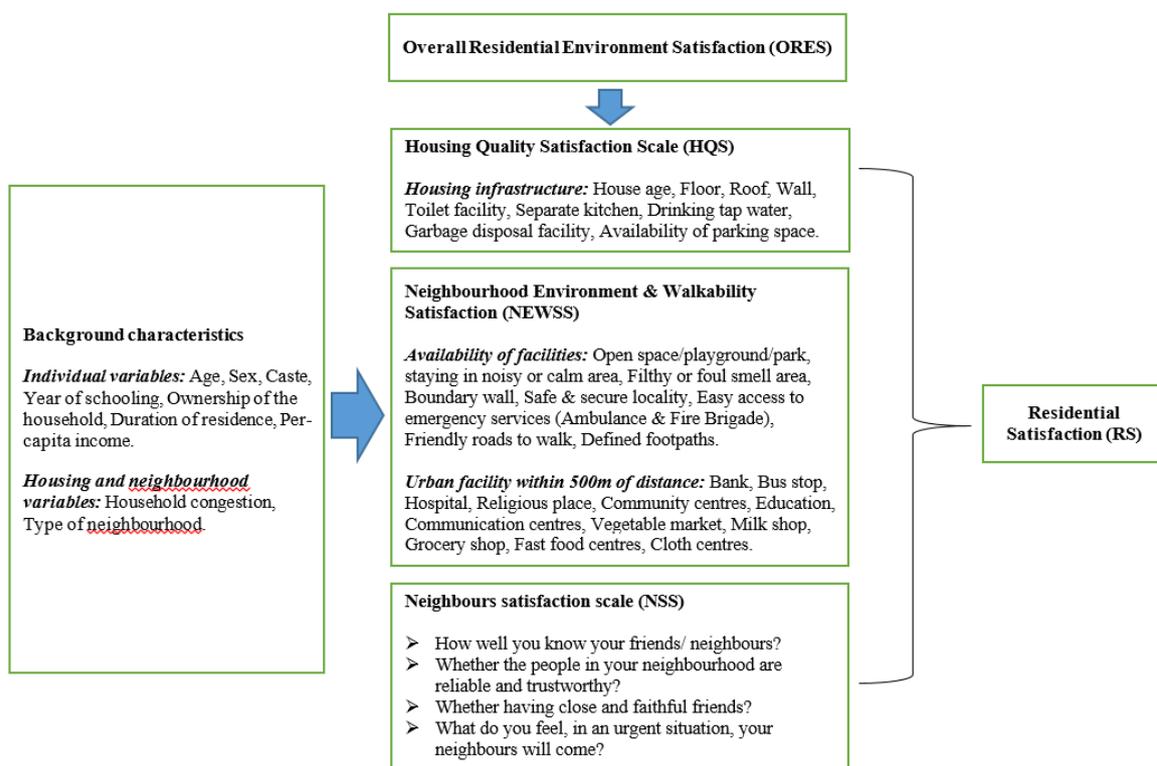
Reliability of scales

Table 1. Common factor (satisfaction scales) reliability analysis

	Cronbach's Alpha	Standardized Cronbach's Alpha	No. of variables
1. Housing quality satisfaction scale (HQSS)	0.87	0.87	11
2. Neighbourhood environmental and walkability satisfaction scale (NEWSS)	0.80	0.79	17
3. Neighbour satisfaction scale (NSS)	0.88	0.89	4
Overall residential environment satisfaction scale (ORES)	0.90	0.89	32

Predictor variables

Individual variables: Age, sex, caste, years of schooling, ownership of the household, duration of residence (years of staying) and per capita income (PCI).

Housing and neighbourhood variable: It includes *household congestion* (refers to the situation where more than ten years of a child lives with a married couple within a room).

Type of neighbourhood/localities: High-rise residential building houses, old colonies houses, chawl houses, slum houses and slum rehabilitated houses.

Methods

The data analysis has been done on Stata 14.2 using suitable statistical tools such as univariate, Bi-virate, one-way ANOVA test, Pearson correlation and Ordinary least square (OLS) regression. For OLS regression the study used continuous response variable overall residential environment satisfaction scale (ORES).

Ethical approval

The study was conducted with the approval of the Students' Research Ethics Committee (SREC) of the International Institute for Population Sciences (IIPS), Mumbai. The ethical committee examined the methodological, technical, and ethical soundness of the study. Additionally, before conducting the interviews of respondents, their informed written consent was obtained and confidentiality of data assured.

Operational definitions

Head of the household (HoH): The definition is used as per census guidelines, i.e., a person who is recognised as such by the household. She or he is generally the person who bears the chief responsibility for managing the affairs of the household and takes the decision on behalf of the household. HoH need not necessarily be the oldest male member or an earning member but may be a female or a younger member of either sex. In case of an absentee de jure 'Head' who is not eligible to be enumerated in the household, the person on whom the responsibility of managing the affairs of household rests was to be regarded as the head irrespective of whether the person is male or female (Census of India, 2011).

Family type: Two married brothers (or two sisters) living together with their respective families qualify to be termed as a joint family. Nuclear plus refers to a nuclear family with other family members but no other married couple. A nuclear family comprises of man with his legally wedded wife and children, whereas a single-family comprises only one person in the household.

Neighbourhood or type of localities: It refers to a limited territory within a larger urban area where people inhabit dwellings and interact socially. The size of the neighbourhood is not fixed with any boundary and generally varies in size as well as population (Gobster, 2001). Irrespective of size and population, a successful neighbourhood which functions well internally and concerning other elements and activities of the city is considered desirable. These two words are used interchangeably in the whole paper. Five different types of the neighbourhood are as follows:

High-rise buildings houses (HRBHs): High-rise residential building houses refer to tall buildings specially structured for residential purposes. In India a building higher than 75 feet (23 m), generally having seven to 10 stories is considered a high-rise. The Municipal Corporation of Greater Mumbai (MCGM) proposed that any building with a height of 30m (nine floors) can be categorized as a high rise. It is a multi-dwelling unit. It may be owned or rented by tenants. We considered those buildings having a minimum of nine-storeys and the maximum has no limit. The dwelling unit considered here are flats. It is a part of a tall building structure. The dwelling units here can access water, bathroom and toilet facilities of their own within the households.

Chawl houses (CHs): Chawls are a type of buildings found in Mumbai. They have often one/two or sometimes three storeys with about 10 to 20 tenements, referred to as kholis, which means rooms on each floor. A usual tenement in a chawl consists of one all-purpose room that functions both as a living and sleeping room. Families on each floor have or may not have to share a common block of toilets.

Old colonies houses (OCHs): Old colonies refer to the colonies which were established long back. They were created by people who migrated long ago. For our study we select one among the following colonies- Parsis/ Sindhi/Gujarati's/Telegu as they are considered among the oldest in Mumbai.

Slum houses (SHs): A slum refers to a residential area where dwellings are unfit for human habitation by reasons of dilapidation, overcrowding, faulty arrangements and design of such buildings, narrowness or faulty arrangement of streets, lack of ventilation, light or sanitation

facilities and a combination of them detrimental to the safety and health of the people (Census of India, 2011).

Slum rehabilitated houses (SRHs): The Government of Maharashtra has launched a comprehensive slum rehabilitation scheme by introducing an innovative concept of using land as a resource and allowing incentive floor space index (FSI) in the form of tenements for sale in the open market for cross-subsidization of the slum rehabilitation tenements which are to be provided free to slum-dwellers.

IV. Results

Profile of the household

Table 2 shows the demographic, economic and physical profile of the household in different neighbourhoods of Mumbai. It is found that the mean age of the household head was consistent across the neighbourhood except for old colonies. Precisely, the dwellers of old colonies lie in the old age (65 to 74 years) category. The mean years of schooling, per capita income and dwelling size of households were highest in OCH followed by HRBH and CH. The mean age of the building was highest in chawls, followed by old colonies and slums. The mean year of residence (length of stay in a particular locality) in Mumbai was highest in old colonies followed by SRH, HRBH and CH.

Table 2: Selected household characteristics by neighbourhood of Mumbai, 2016

Household characteristics	HRBH Mean [SD]	SH Mean [SD]	SRH Mean [SD]	CH Mean [SD]	OCH Mean [SD]	Total Mean [SD]
Age of household head	54.6 [15.6]	43.7 [10.4]	49.3 [13.1]	48.4 [10.6]	71.0 [12.6]	53.4 [15.7]
Years of schooling	16.1 [2.2]	7.0 [3.8]	8.4 [4.3]	11.4 [3.5]	17.2 [2.3]	12.0 [5.2]
Household size	2.9 [1.1]	4.9 [2.1]	5.4 [1.5]	4.3 [1.7]	2.7 [1.5]	4.1 [1.9]
Per capita income (in 000)	490 [345]	84 [61]	73 [37]	150 [113]	561 [514]	272 [352]
Dwelling size (sq. ft.)	851.6 [149.2]	129.6 [37.6]	273.0 [28.5]	320.3 [103.7]	1202.7 [330.4]	555.4 [440.0]
Age of the building	11.6 [6.0]	53.6 [17.8]	13.2 [1.8]	90.7 [22.8]	62.2 [30.6]	46.3 [35.7]
Length of stay (years)	70.2 [9.7]	52.5 [14.0]	84.1 [23.8]	61.4 [18.4]	85.6 [17.5]	73.3 [22.1]
N	90	90	90	90	90	450

Level of neighbourhood satisfaction

Further, the differential in the profile of the neighbourhood encourages examining the level of neighbourhood dis(satisfaction) with their residents (Figure 4). The mean of satisfaction is not consistent across different neighbourhoods on any satisfaction scale, i.e., housing, neighbourhood, neighbours and overall. Further, the result shows that the mean satisfaction level of the SHs for housing and neighbourhood is consistently low by 2 and 6 points respectively. However, on neighbour's satisfaction index, HRBH shows the lowest satisfaction level by 2 points only. Whereas it shows the highest satisfaction on housing index by 10 points, old colonies show the highest on neighbourhood satisfaction and SRHs and CHs show highest on neighbour's satisfaction index. Qualitative insight shows that residents living in SRHs and CHs share corridors and stairs as an interaction space. The overall satisfaction index shows the comprehensive scenario of satisfaction on

which SH lies at the lowest level, followed by CH, SRH, HRB, and OCH. The dwellers of OCH are more satisfied compared with other neighbourhoods because of the best location of their residences and easy access to urban services. Although SH is located in the centre of the city but denied various necessities of life which makes the situation more unsatisfactory. Moreover, neighbour satisfaction holds a significant place among SH, despite having low mean for housing and neighbourhood satisfaction.

Figure 4: Mean level of residential satisfaction in the various neighbourhoods in Mumbai
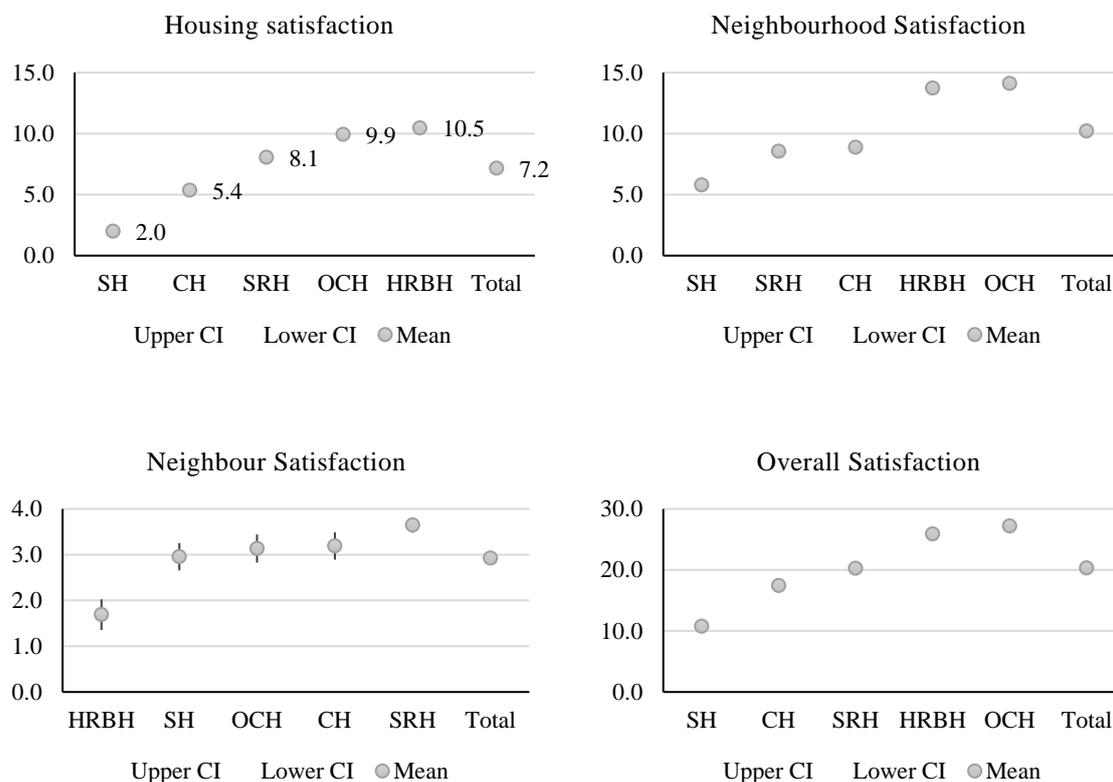

Table 3 presents the result of the one-way ANOVA test to verify the level of significant difference among various neighbourhoods. The sum of squares between and within groups of the variables are 16,010 and 3,391 respectively. Moreover, the mean squares between and within groups are 4,002 and 8 respectively, yielding an F-ratio of 525 which is significant at 0.01 probability level. This result confirms that there is a variation in the residential satisfaction among various selected neighbourhoods of Greater Mumbai. Further, a Bonferroni post hoc homogeneity of variance test was conducted to compare the groups individually and the mean level of satisfaction for all the type of localities differed significantly from one another at $p < 0.05$.

Table 3: ANOVA test of significance among types of locality and ORES

Source of variation	Sum of squares	Mean square	Df	F	P
Between groups	16,009.6	4,002.4	4	525.2	0.0000
Within groups	3,391.3	7.6	445		
Total	19,400.9	43.2	51.2		

Note: P-value- ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Determinants of residential satisfaction

To facilitate the association of confounding factors with ORES, pair-wise correlation has been conducted. The findings revealed that age (r=0.47), tenure of stay (r=0.37), per capita income (r=0.60) and type of locality (r= 0.20) have significant (p < .05) and positive relationship with ORES. Caste (r= -0.40), year of schooling (r= -0.64) and household congestion (r= -0.56) found a significant (p < .05) negative association with ORES. Here household congestion refers to the situation where more than ten years of a child lives with a married couple within a room.

Table 4: Association between background characteristics and ORES (N=450)

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11
V1	1										
V2	-0.082	1									
V3	0.469*	0.124	1								
V4	-0.403*	-0.016	-0.347*	1							
V5	-0.640*	0.148	-0.294*	0.514*	1						
V6	0.150	0.114	0.168*	-0.278*	-0.247*	1					
V7	0.375*	0.077	0.527*	-0.205*	-0.166*	-0.053	1				
V8	-0.137	-0.131	-0.209*	-0.013	-0.056	0.099	-0.314*	1			
V9	-0.562*	-0.062	-0.371*	0.366*	0.473*	-0.120	-0.339*	0.197*	1		
V10	0.600*	-0.015	0.391*	-0.484*	-0.620*	0.360*	0.206*	-0.051	-0.438*	1	
V11	0.200*	-0.049	0.277*	-0.084	-0.123	-0.022	0.259*	0.336*	0.003	0.084	1

Note: V1- ORES, V2- Sex of the household head, V3-Age of head of household, V4- Caste of household head, V5-Years of schooling of household head V6-Family type, V7-Tenure of the stay (years), V8-Ownership of the household, V9-Household congestion, V10-Per capita income and V11-Type of locality. P-value: *p < .05.

After analysing the unadjusted association of confounding factors of ORES by correlation, we carried the OLS regression to see the adjusted effect of predictor variables for ORES (Table S5). The predictive efficacy (Adjusted R^2) of the Table is high which approximately explains 85 per cent of the variance of ORES. Further, coefficients show that other backward castes, up to 12 years of school and less than ten years of stay have a significantly less score for ORES by 95, 75, 72 units respectively. The joint family, own house and the uncongested households have a significantly higher ORES scores compared with its counterpart by 1.5, 1 and 1.8 points respectively. Similarly, in the context of the type of locality, every locality has more satisfaction score of ORES than a slum. Likewise, OCH (14.9) has the highest ORES satisfaction score, followed by HRBH (13.4), SRH (9.3) and CH (6.8) compared with the SH.

V. Discussion

The study reveals the overall residential environment satisfaction (ORES) in different neighbourhoods of Mumbai. It also examines the significant predictors affecting ORES. The salient findings are: first, one-way ANOVA shows that despite being located proximal to one another, all the neighbourhood have different levels of satisfaction with their dwelling. Second, the mean satisfaction level indicates that predominantly slums were followed by chawls indicating a lower satisfaction level. Third, the correlation coefficient explains that per capita income (PCI) is positively related to ORES. But after controlling PCI with other confounding factors in regression, its effect becomes insignificant. Fourth, duration of residence, type of family, household ownership and household congestion are major determining factors for ORES.

Considering the first finding, the type of locality significantly influences the perception of dwellers on ORES. Thus, dwelling types in terms of suitability and acceptability of residential amenities, dwelling features, neighbourhood facilities and intimate relation with neighbours influenced users' perception about overall residential environment satisfaction. Thus, this finding

aligned with the previous finding on the relevance of the type of locality and attributes of housing, neighbourhood and neighbours affects the satisfaction level (Jiboye, 2014; Lawrence, 1987; Rapoport, 1976). The socio-cultural environment influences suitable dwelling's choice, which is an important parameter for qualitative housing (Olayiwola et al., 2006). Karuppannan and Sivam (2011) argue that social sustainability and social inclusion require suitable housing forms and neighbourhood features for their development or growth. Deprivation from these features leads the slum dwellers to lower ORES. On this issue, Naidu (1978) asserted that normally slums suffered from dual infrastructure loss. On the one side, slums are constructed with substandard materials and they lack the facilities considered standard norms of the city.

Table 5: Result of ordinary least square (OLS) regression on Overall Residential Environment Satisfaction (ORES)

Background characteristics	Coef. (β)	[95% CI]	
Caste of household head			
General[®]			
OBCs	-0.95***	[-1.64	-0.26]
SCs/STs	0.16	[-0.59	0.91]
Years of school of household head			
More than 12[®]			
Up to 12	-0.75*	[-1.56	0.05]
Family type			
Joint[®]			
Nuclear plus	0.04	[-0.95	1.03]
Nuclear	0.35	[-0.36	1.06]
Single	-1.58**	[-2.80	-0.37]
Duration of residence			
Less than 10 years[®]			
10-39 years	0.72**	[0.00	1.44]
More than 40 years	0.57	[-0.26	1.41]
Ownership of the household			
Owned			
Rented	-1.05***	[-1.69	-0.40]
Household congestion			
No[®]			
Yes	-1.84***	[-2.49	-1.20]
Type of locality			
SHs[®]			
HRBHs	13.41***	[12.08	14.75]
SRHs	9.31***	[8.51	10.11]
CHs	6.82***	[5.93	7.71]
OCHs	14.95***	[13.45	16.44]
N	450		
Adjusted R^2	0.85		

Note: ®-Reference Category; P-value: *$p < .1$**$p < .05$; ***$p < .01$; Other control variables: Sex, Age, PCI.

On the other hand, they being unauthorized, the Municipal Corporation does not provide basic infrastructure such as roads, drainage, water and sewerage connections, etc. Other possibilities may be due to low aspirations among slum dwellers, knowing the reality and their background. The findings are in line with the work done by Phillips et al., (2004) that lower expectations prevail.

Diener & Biswas-Diener (2002) reviewed the number of studies that reported correlations between life satisfaction and wealth and they asserted that both are positively correlated. The value of the correlation coefficient shows that variation increases up to 0.60. Similarly, the third finding of the present study is also consistent with it. However, they stated that acquiring more income is not

likely to enhance the wellbeing actively. This shows that an accumulation of wealth has an inverse relationship with satisfaction. This could be because as income increases, the desire and greed for more assets and commodities also increase which, in turn, makes them more unsatisfied (Biswas-Diener & Diener, 2009; Diener et al., 2003). This reasoning refers to the adjusted effect of other confounding variables on the satisfaction that is also consistent with our finding. Besides, Lu (1999) discussed that the duration of residence, type of family, ownership of the house and household congestion are the prominent predictors of residential satisfaction in his study, which is also consistent with this study. Duration of residence is positively associated with neighbourhood satisfaction. Staying for a longer duration provides more opportunity to explore the nearby areas as well as creates an attachment to the place and good social bonding with neighbours. It helps the respondents to feel satisfied and comfortable within their current neighbourhood. However, this finding is similar to that of the study done by Kshetrimayum et al., (2020), where they also found that the length of residents moderate the relationship between access to facilities and residential satisfaction.

Sometimes a good social relationship can compensate for poor physical conditions and residents are likely to remain (Galster, 1987). Conversely, with greater exposure of time, adverse neighbourhood effects have manifested, and in some cases needs and aspirations of residents have changed with life's course. These circumstances have encouraged higher probabilities for the relocation of households (Huff & Clark Wav, 1978; Thomas et al., 2016). Households having a joint family have much ORES. This result is consistent with those of the previous studies which shows that members with a joint family reported good social adjustment and high resilience as compared with those in the nuclear family (D'cruz & Bharat, 2001; Sahar & Muzaffar, 2017).

The home owners' status is critical in determining the level of residential satisfaction and ownership is a subject of pride. (Kaitilla, 1993; Tan & Khong, 2012). Besides, dissatisfied renters are more likely to move than their homeowner's counterparts (Diaz-Serrano, 2006). The most likely explanation for this is that renters have less control over their residential environment and in general have a lower housing quality (Mohit & Nazyddah, 2011). The proposition of residential congestion qualifies the poor housing condition. In the present study, results indicate that an uncongested household has more ORES compared with its counterpart. The congested household has a detrimental effect not only on physical health but also on mental health (Fuller et al., 1993) because it breaches privacy. Consequently, it becomes the reason for increased marital instability and parent-child tensions (Fuller et al., 1993).

Conclusion

Finally, the study concludes that with the increasing length of stay, usually dwellers accustomed with housing, neighbourhood features and neighbours' attribute, residents start feeling satisfied. Additionally, older and lower income household heads feel threshold of satisfaction within current residential environment. Housing development should direct the designing of households to culturally fit for the people living in it. The study recommends finding out more ways to make dwelling places (especially SH, SRH & CH) more satisfying for sustainable development.

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