QUALITY OF HOUSING AND MENTAL WELLBEING OF RESIDENTS DWELLING IN OPEN SLUMS AND SLUM REHABILITATION AUTHORITY PROJECTS IN MUMBAI: A COMPARATIVE STUDY

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M2017PHHP015

A project report submitted in partial fulfilment of requirements for the degree of Master of Public Health in Health Policy, Economics, and Finance

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2019
DECLARATION

I, SAGAR SINHA, hereby declare that this research project report titled “Quality of Housing and Mental Well-being of Residents dwelling in Open Slums and Slum Rehabilitation Authority Projects in Mumbai: A Comparative Study” is the outcome of my own study undertaken under the guidance of PROF. SHANKAR DAS, Professor, Centre of Health Policy, Planning & Management, School of Health Systems Studies, Tata Institute of Social Sciences, Mumbai. It has not previously formed the basis for the award of any degree, diploma, or certificate of this Institute or of any other institute or university. I have duly acknowledged all the sources used by me in the preparation of this report.

26 February 2019

[SAGAR SINHA]
CERTIFICATE

This is to certify that the research project report entitled “Quality of Housing and Mental Well-being of Residents dwelling in Open Slums and Slum Rehabilitation Authority Projects in Mumbai: A Comparative Study” is the record of the original work done by SAGAR SINHA under my guidance and supervision. The results of the research presented in this report have not previously formed the basis for the award of any degree, diploma, or certificate of this Institute or any other institute or university.

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ACKNOWLEDGEMENTS

This study would not have been successful without the efforts of several individuals who have guided, encouraged, motivated, and supported me through the course of the third semester. I am deeply indebted to my faculty supervisor, Prof Shankar Das, for having the belief in me to conduct this study. His prompt support in times of need, as well as connections in the area were of great help, and I am deeply grateful for his assistance. His regular feedback and reassurances at all stages of the study are greatly appreciated.

I would also like to thank the outreach workers of the local urban NGOs working tirelessly to improve the quality of living of residents of the city urban slums. Their assistance was greatly appreciated, and this study would not have been possible without their connections and guidance.

I am also thankful to Dean, School of Health Systems Studies, Tata Institute of Social Sciences, Mumbai, and faculty members for their valuable suggestions during the course of the study. I am thankful to all my friends and colleagues for their continuous support, insights, and reassurance.

Last, but not the least, I would like to convey my gratitude to my family for standing by me through thick and thin, and supporting me emotionally, and financially.

SAGAR SINHA
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1. INTRODUCTION

Because of increasing population growth and limited economic resources, housing continues to be among the major social problems facing developing nations today. Substandard housing poses tremendous health and societal risks to its residents. An important element of society’s health, safety, and stability, achievement of minimum quality housing standards is viewed as the most important single indicator of the success of government actions (Struyk & Turner, 1986).

According to the United Nations, approximately 50% of the global urban population can be classified as slum dwellers—individuals who suffer from inadequate access to safe water, sanitation and other infrastructure; poor structural quality of housing; overcrowding; or insecure residential status. In the least developed countries, estimates of slum dwellers amount to approximately 78% of the urban population (United Nations Human Settlements Programme, 2003). South Asia has the largest share, followed by Eastern Asia, sub-Saharan Africa and Latin America. China and India together have 37% of the world’s slums (United Nations Human Settlements Programme, 2006). Between 2000 and 2010, the number of slum dwellers increased by six million every year (City Alliance, 2010). In India the slum population increased from 75.26 million in 2001 to 93.06 in 2011 (Government of India, 2011).

Slums have both negative and positive characteristics. On the negative side, slums have the most intolerable of urban housing conditions, which frequently include: insecurity of tenure; lack of basic services, especially water and sanitation; inadequate and sometimes unsafe building structures; overcrowding; and location on hazardous land. In addition, slum areas have high concentrations of poverty and of social and economic deprivation, which may include broken families, unemployment and economic, physical and social exclusion (Abrams, 1964). Slum dwellers have limited access to credit and formal job markets due to stigmatization, discrimination and geographic isolation (Amis & Rakodi, 1995). People in slum areas suffer inordinately from water-borne diseases such as typhoid and cholera, as well as more opportunistic ones that accompany HIV/AIDS. Slum areas are also commonly believed to be places with a high incidence of crime, although this is not universally true since slums with strong social control systems can have low crime rates.

On the positive side, slums are the first stopping point for immigrants – they provide the low-cost and often only affordable housing that will enable immigrants to save for their eventual absorption into urban society (Amis & Kumar, 2000). As the place of residence for low-income employees, slums keep the wheels of the city turning in many different ways. The
majority of slum dwellers in developing country cities earn their living from informal sector activities located either within or outside slum areas, and many informal entrepreneurs operating from slums have clienteles extending to the rest of the city. Slums are also places in which the vibrant mixing of different cultures frequently results in new forms of artistic expression. Out of unhealthy, crowded and often dangerous environments can emerge cultural movements and levels of solidarity unknown in the suburbs of the rich. Against all odds, slum dwellers sometimes develop economically viable and innovative shelter solutions for themselves. However, these few positive attributes do not in any way justify the continued existence of slums and should not be an excuse for the slow progress towards the goal of adequate shelter for all.

The government of India has implemented various rehabilitation policies like Jawaharlal Nehru National Urban Renewal Mission (JNNURM) and Slum Rehabilitation Scheme (SRS) to ameliorate inadequate housing issues. Under these policies slum dwellers are rehabilitated to public housing at either the same site or a different site. Public housing is meant to provide basic services to community, secure land tenure, and enhance overall living conditions. The Government of India announced the National Housing Policy (NHP) in 1988, whose long term goal was "to eradicate the problem of lack of housing, improve the housing conditions of the inadequately housed, and provide a minimum level of basic services and amenities to all" (National Informatics Centre, 2011).

But to understand the efficacy of these policies in creating just and equitable housing conditions, it is vital to empirically evaluate the effects of slum rehabilitation housing policies by assessing how housing quality affects people’s well-being and quality of life. First it is pertinent to evaluate if the housing quality improves from slum neighbourhoods to public housing. Secondly, does housing quality influence occupants’ well-being? In this study, I explore the relationship between housing quality and well-being by comparing two groups living in different housing conditions: slums and public housing. Questions about the effects of housing quality on people’s well-being are important to ask. A better understanding of this relationship not only provides theoretical knowledge of how environments affect human well-being, but also enables us to make better housing policy decisions, design more apposite housing, and provide insight into areas for effective interventions. The housing research that has been conducted thus far has suggested that housing conditions do have an effect on residents’ well-being. However it is difficult to clearly interpret the relationship through prior research. There is huge variability in the ways housing quality is measured, and sometimes it is measured only through subjective appraisal. Poor measures of housing quality are among
the most common failings of housing research. Also housing research, which often relies on cross-sectional comparisons, is prone to internal validity threats. There are various confounding factors such as socio-economic status, age, education etcetera related to housing quality. If factors such as these co-vary with the independent variable (e.g., higher income families in better quality housing; low-income families in poor quality housing), then it is unclear whether housing quality or the confounding variable truly explains the variance in dependent variables.

Moreover, well-being is defined narrowly in most of the extant literature related with housing. Most studies focus on one or few aspects of well-being such as physical health, mental health, social networks, or life satisfaction. However, the broad construct of psychosocial well-being encompasses a plethora of social indicators which reflect quality of life. Ryff (1989) summarized dimensions of psychological well-being into six major categories; self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life and personal growth. The quantity of indicators can make it difficult to measure the construct. This problem can be solved by constructing a small number of effective indicators as master indices, which can represent a cluster of indices (Rapley, 2003). These domains can incorporate; physiological conditions, health conditions, social conditions, materialistic conditions, personal conditions, work conditions, environmental conditions, cultural and leisure conditions (Diener & Arora, 2009). Based on aspects of well-being mentioned in the literature, several domains that hypothetically are influenced by housing conditions are studied in this research.

**Rationale for undertaking this study**

The past few decades have seen a renaissance of interest amongst planning scholars and practitioners in promoting public health through urban planning and design (Boarnet, 2006; Corhurn, 2009; Frank et al., 2006; Handy, Boarnet, Ewing, & Killingsworth, 2002). Existing studies, however, have focused overwhelmingly on physical health; the potential role of urban form in increasing people’s positive mental wellbeing is understudied (Delbosc, 2012; Pfeiffer & Cloutier, 2016), even though facilitating life satisfaction has long been one of the most important goals of urban planners (Cao, 2016). Furthermore, almost all the existing studies have been conducted in more developed countries, and evidence from the less developed world is scant. This study partially fills these gaps by exploring the link between neighbourhood environment (physical and social) and positive mental wellbeing in Mumbai slums.
2. REVIEW OF EXISTING LITERATURE

The effects of poor housing on physical health have been recognized in the scientific literature for over 150 years, since Chadwick (1843) estimated the average life expectancy of people in Liverpool in the worst housing (cellars) to be only 15 years. The literature on housing conditions and health points to the conclusion that housing can have significant impacts on physical health. Studies have shown that people living in poor housing conditions are more likely to suffer from physical health consequences. For instance, inadequate heating systems and the presence of dampness, moulds, and other allergens are associated with poor respiratory health (Bornehag et al., 2001; Burridge & Ormandy, 1993; Matte & Jacobs, 2000; Peat, Dickerson, & Li, 1998). Several British studies such as those by Martin, Platt and Hunt (1987) and by Strachan (1988) focused on damp and moldy housing demonstrated severe detrimental effects on physical health. These studies document detrimental effects of dampness and mold not only on respiratory illnesses (e.g. wheeze, coughs, cold) but also on a variety of non-respiratory ailments (nausea, vomiting, aching joints). Epidemic increases in asthma have been partially attributed to ambient pollutants along with exposure to allergens in the home (Hopton & Hunt, 1996; Packer, Stewart, & Fowle, 1994; Rauh, Landrigan, & Claudio, 2008; Rosenstreich et al., 1997). Furthermore, studies focused on effects of exposure to toxic substances such as lead, radon, and carbon monoxide, have shown serious detrimental health effects (Field, 2001; Leighton, Klitzman, Sedlar, Matte, & Cohen, 2003; Meyer, McGeehin, & Falk, 2003; Raub & Benignus, 2002; Walker & Hay, 1999). Another set of risks to health that literature associates with housing are injuries (Bonnefoy, 2007; DiGuiseppi, Edwards, Godward, Roberts, & Wade, 2000; Great Britain. Dept. of Health, 1999). Some of this risk is caused by features of the home (e.g., steep staircases), the presence or absence of safety equipment (e.g., stair gates, handrails) (Shaw, 2004; Tinetti, Speechley, & Ginter, 1988). Thomson et. al. (2009) reviewed 45 housing intervention studies from 1887 to 2007 and concluded that housing improvements can generate health benefits. Although the authors do acknowledge some methodological limitations of the studies, there is evidence that interventions to improve housing enhance health.

A longitudinal study where around 400 women were followed as they moved from substandard housing to better quality housing concluded that the rate of total episodes of illness were lower after the group moved (Wilner, Walkey, Glasser, & Tayback, 1962). A British study utilizing data collected at six time periods between 1958 and 1991 for a sample of 11407 participants concluded that multiple housing deprivation factors led to a 25 % in-
creased risk of experiencing severe ill health across the life course (Marsh, Gordon, Heslop, & Pantazis, 2000). The prevalence of literature concerning housing related physical illness continues to grow and shed light on the bleak living conditions of people with access to few resources.

**Mental Health**

In addition to physical ailments, previous research has also provided evidence of links between housing quality and psychological distress or mental health. People in sub-standard housing have been found to be more likely to suffer from mental health issues such as depression and anxiety. A study conducted in London found that —housing difficulties such as severe overcrowding, extreme physical shortcomings, or major problems related to noise or tenure security partly explained variance in mental health in women (Brown, Bhrolchain, & Harris, 1975). More studies corroborated their finding of effects of housing quality on mental health (Halpern, 1995; Hunt & McKenna, 1992; Kasl, Will, White, & Marcuse, 1982; Payne, 1997).

One of the largest longitudinal studies, conducted by Wilner, Walkley, Pinkerton, and Tayback (1962), found that after relocating to better-quality public housing, residents’ psychological well-being improved significantly compared to the wait-list control group. They studied effects on housing quality on multiple aspects of well-being like health; psychological adjustment pertaining to personal and family relations, neighborhood ties, self-concept and aspirations. Elton and Packer (1986) also compared the psychological well-being of relocated public housing occupants and found reduced depression and anxiety symptoms relative to the control group. Evans, Wells, Chan, and Saltzman (2001) studied women relocating through a housing program and found that change in housing quality was predictive of post-move psychological distress. Wells and Harris (2007) studied a group of low-income women relocating from inadequate to newly constructed homes and results indicated that changes in housing quality predict post-move psychological distress, after controlling for pre-move psychological distress. They also suggested that improvement in psychological distress from improved housing was largely due to one subcomponent of housing quality; crowding. Furthermore, in a review of literature on housing and mental health, Evans, Wells and Moch (2003) reveal that across many studies representing various populations, there is a positive correlation between mental health and housing quality.
Perceived stress

Perceived stress can be viewed as a variable measuring the experience of the level of stress as a function of objective stressful events, coping processes, personality factors etcetera (Cohen, Kamarck, & Mermelstein, 1983). It seems logical to expect the effects of stress to be closely related to the many direct effects of material deprivation, simply because material insecurity is always worrying (Wilkinson, 1997). An environment that is continually and uncontrollably noisy, noxious, depressing or dangerous is a serious source of stress (Pacione, 1990). Perceived stress is associated with housing deprivation and housing quality in the existing literature. Cohen et al. (2000) concluded that expectations and aspirations are conditioned by experience so that poor housing and deprived neighborhoods lead to stress and a general state of dissatisfaction. Based on study of 588 families in England, Fanning (1967) concluded that psychological stress varied by housing type; those residing in walk-up apartments were most stressed. Similar results with housing type were obtained by Gillis (1977) in a study of 442 residents of two Canadian cities, where residents living in apartments were more stressed in comparison to residents of single-family homes. Overcrowded housing conditions have also been shown to exacerbate stress in residents (Gove, Hughes, & Galle, 1983; McCarthy & Saegert, 1979; Mitchell, 1971). Moreover, specific housing problems like inadequate structural conditions, lack of basic amenities may lead to higher stress as well. In a prospective study, Cattaneo et. al. (2007) found that replacing dirt floors by cement floors resulted in significantly lower rates of perceived stress in people in Mexico.

Hope

Hope is defined as the process of thinking about one's goals, along with the motivation to move toward (agency) and the ways to achieve (pathways) those goals (Snyder, 1995). Hope can be viewed as a basic, fundamental, integral part of living (Fromm, 1968; Hinds, 1984; Miller, 1989). Marcel (1962) sees hope as a central raison d'être for being human. Russinova (1999) described three types of hope-inspiring strategies. The first explores the healing potential of supportive relationships; the second focuses on increasing the consumer's inner resources; and the third facilitates the use of external resources. It can be posited that the external environment may nurture hope or negatively impact levels of hope.

Previous studies examined the effect of housing on the level of hope of residents and concluded that housing environment affects hope. For instance, in an exploratory study with a sample of 60 older adults in a nursing home, perceptions of hope were found to be influenced by place of residence (Herth, 1993). Housing was shown to influence the level of hope in be-
reaving elders (Lund, Caserta, & Dimond, 1986). Housing conditions were found to influence self-esteem and hope in a study with 171 low-income people (Rohe & Stegman, 1994). In a longitudinal study, as women moved from inadequate housing to better housing conditions, their hope and optimism levels improved (Wilner et al., 1962). However, hope is not a very ubiquitous dependent variable in housing studies. It is studied more within the context of social support and human relationships as these are significant factors affecting hope levels.

**Neighborhood Social Ties**

Neighborhood social ties are the glue that makes a collection of unrelated neighbors into a neighborhood—a source of social support and sense of community (McMillan & Chavis, 1986; Unger & Wandersman, 1985). Robert Putnam (2000) defines social capital as the connections among individuals—social networks and the norms of reciprocity and trustworthiness that arise from them. Thus, social capital exists in the structure of relationships and helps individuals and groups achieve goals (Coleman, 1988). Briggs (1999) conceptualizes social capital as having two dimensions. One element is made up of the social ties that provide us with social support and help us get by in life. The other element is made up of the ties that act as social bridges and provide us with leverage to help us get ahead in life.

Several studies have shown that poor urban residents often have insular and localized social networks that offer little opportunity for advancement (Tigges, Browne, & Green, 1998; Wacquant & Wilson, 1989; Wilson, 1996). In effect, such residents are isolated from the social capital of mainstream society. Yet, another set of studies has found that rich social networks do exist in low-income communities and that these kin networks provide an important safety net for the poor (Edin & Lein, 1997; Stack, 1974; Vale, 2002). These studies point to tight functioning social networks as one of the greatest assets in poor communities and challenge the notion that the social networks of the poor are inferior. These networks have been shown to be disrupted with relocation under rehabilitation and redevelopment housing policies (Cadavid, 2010). Scholars have raised concerns about the disruption of social ties offering social support (Clampet-Lundquist, 2006; Popkin et al., 2004) as well as the disruption of the social fabric of entire communities (Fullilove, 1996; Venkatesh, 2005) in relation to housing rehabilitation programs. Analysing in-depth interviews with 41 families who were relocated, Lundquist (2010) concluded that relocation translated into less socializing and weaker local ties.
Quality of life

Quality of life (QOL) is a subjective phenomenon based on a person's perception of various aspects of life experiences, including personal characteristics, objective life conditions, and the perception of significant others (Schalock, 1990). Borthwick-Duffy (1992) has presented three perspectives on quality of life: (a) quality of life defined as the quality of one's life conditions, (b) quality of life defined as one's satisfaction with life conditions, and (c) quality of life defined as a combination of both life conditions and satisfaction. Along similar conceptual lines, the WHO (1994) defines QOL as —an individual's perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns.

It is plausible to theorize a relation between an individual's perception of their position in life and their housing situation. Poor housing conditions can mar perception of being in a good position in life. Kahlmeier et. al (2001) studied associations between changes in reported quality of life with change in 40 housing quality indicators by using multiple logistic regression adjusting for socio-demographic variables. They concluded that an improvement in perceived environmental housing quality was conducive to an increase in wellbeing of movers when other dimensions of housing quality and potential confounders were taken into account. Similar results were obtained by a study in Germany with older adults. The central hypothesis of this work that housing-related variables explain a substantial portion of variance in life quality was supported by the data (Oswald, 2003). However, most housing quality research focuses on singular aspects of quality of life like health, stress, social relations and like. This is because quality of life is a broad construct and the variation in this construct may be a result of variety of factors other than housing quality such as socio-economic status, education level, employment status, family conditions etcetera. But there is some merit in studying the effect of housing quality on quality of life as people's perception of their position in life can be influenced by the house that they live in.

As Cities Alliance aptly observes, slums result from failed policies, bad governance, corruption, inappropriate regulation, dysfunctional land markets, unresponsive financial systems, and a fundamental lack of political will (2000). Thus, while inadequate housing certainly comprises a significant facet of the slum challenge, shelter remains but one component of a larger development problem. Slum and housing policies have multiplied, bringing new waves of thinking and solutions that consider much more than just a house. Previous evaluations of
these policies have revealed that slum rehabilitation policies, by changing the living environment, might trigger positive changes as well as unwanted side-effects. These evaluations mostly fall into three major categories; economical evaluations, institutional evaluations and spatial evaluations.

Economical evaluations of slum policies have reported that these policies have resulted into poverty reduction, better access to credit and higher income generation (Aiga & Umenai, 2002; Bapat, 1988; Cattaneo, 2007; Sanyal & Mukhija, 2001). But there is contradictory evidence in the literature that shows disruption of informal employment networks leading to reduction in income (Vaquier, 2010). Spatial evaluations of these policies have reported rehabilitation resulting into longer commute to work, poverty recycling and unsettled social and professional networks (Cadavid, 2010; Mukhija, 2003). Institutional evaluations mostly evaluate how various organizations and groups involved in the rehabilitation policies work with each other and how well the system works. There have been several case studies of rehabilitation projects in India where the relationship among slum-dwellers, rehabilitation agencies and non-government organizations throughout the process is examined (Mukhija, 2001; Nijman, 2008; O'Hare, Abbott, & Barke, 1998). These studies have reported a need for more formal involvement of non-government organizations in the rehabilitation process. Moreover, they have also recognized a need for rehabilitation agencies to not only participate in the rehabilitation process in crude monetary terms, but to also provide qualitative and quantitative inputs that incorporate collective action to form co-operatives, to complete paper work, and to participate in managing and monitoring development as it takes place.
3. PROGRESS OF SLUM REHABILITATION POLICY IN MUMBAI

Urban development in Mumbai has presented a choice between two concerns, the first being the city’s social policy, that required directing public investment towards the improvement of infrastructure and sanitation, and provision of adequate housing for most of its inhabitants; the second being the vision of its business and political class of developing a leading commercial and industrial centre. In the decades after independence, the latter ambition has been pursued under the aspiration of achieving ‘world class’ status by emulating other cities: Paris in the 1950s and 60s, New York in the 70s and 80s, Singapore in the 90s, and Shanghai in the first decade of the new millennium (Mahadevia and Narayanan 2008). Each of these periods, including the colonial period, has seen shifts in ‘slum’ discourse and policy, along with the consequences of these shifts on the city’s poorer inhabitants. For more than a century, the municipal government and the various agencies operating in the city have been more efficient at dis-housing than housing the urban poor, and the scale and intensity of dis-housing since liberalization in 1990s have increased dramatically (ibid).

Existing literature on public policy in housing in Mumbai is largely focused on the post-independence period. Beginning with the period before independence where disease and sanitary concerns resulted in interventions by the improvement trust, policy in the first two decades after independence was motivated by similar concerns and sought to address the ‘slum problem’ through clearance and public housing construction. In the early 1970s slum clearance was combined with ‘improvement’ and self-building schemes, and large resettlement schemes; ‘slums’ had now become synonymous with informal settlements. Following a few experiments in upgrading as well as redevelopment in the mid-1980s, rehabilitation of ‘entitled’ dwellers through redevelopment soon emerged as the dominant approach of intervention in informal settlements. From early 1990s, on site redevelopment, and resettlement and rehabilitation projects have been the primary mode of providing housing for the poor (Indorewalla, 2015).

The Glasgow Phase: Improvement Schemes And Suburbanization, 1898-1933

Modeled on the nineteenth century Glasgow improvement trust, the Bombay City Improvement Trust (BCIT) was formed after plague struck the city in 1896. Overcrowding and abysmal housing conditions in the Indian section of the town contributed to the spread of the disease. One historian called it the ‘most dramatic and destructive manifestation of municipal failure in the nineteenth century’ (Chandavarkar 2009: 52). About 500,000 inhabitants fled
the city, and in three years, the plague claimed 44,984 lives (Arnold 2012). The fear of commercial extinction forced the Government of Bombay to recognize the dependence of the city’s economic future on its social policy. The BCIT was set up to develop the city in a planned way, by laying new roads, improving crowded localities, constructing sanitary dwellings for the working classes, and reclaiming land for the city (Gordon 1978: 121). The Board of the trust was dominated by the city’s elite: it had representatives of the Millowners association, the Bombay Chamber of Commerce and industry and the Municipal Corporation – which itself was dominated by landed interests, its franchise limited to property owners, about 1% of the city’s population (Hazareesingh 2007).

The BCIT approached the problem of insanitary dwellings and housing by carrying out improvement ‘schemes’ involving new housing construction on lands handed over by the Bombay government and the Corporation, and by targeting slum areas without providing alternative accommodation to evicted dwellers. Armed with the Land acquisition act of 1894 and the power to designate blighted areas, the BCIT could undertake comprehensive renewal schemes in large areas of the city (Rao 2013).

The trust’s activities, however, greatly exacerbated the housing crisis and increased congestion in some areas. By 1919 the trust had demolished 24,428 houses and constructed only 21,387. At this point, of 1.2 million inhabitants of Bombay city, 0.89 million lived in single room tenements, and there was an overall shortage of 64,000 units in the city (Kidambi 2007: 112). In the 1920s, the Trust began suburban expansion and the creation of new building sites in the northern peripheries, with the aim of relieving congestion in the overcrowded areas. The use of the term ‘slum’ was transformed: from being an indicator of inadequate conditions, it became the justification of a settlement’s removal.

Municipal reform beginning in the early 1920s and the gradual withdrawal of the colonial state from urban intervention after the ‘mis-adventures’ of the Government of Bombay’s executive organ the Bombay development directorate (BDD), meant that the planning process in the city was now increasingly in the hands of the Municipal Corporation (Rao 2013). The BCIT itself was formally wound up in 1933 and absorbed into the Corporation.

**The Paris Phase: Slum Clearance And Public Housing, 1950s And 60s**

Till the early post independence decades, *chawls* remained the dominant form of low-cost dwelling for the city’s working poor. The chawl, or single room tenement housing “‘warehousing’ large numbers of labouring classes in as cheap a manner as possible’ (Burnett-Hurst 1925) were of three kinds. Single family dwelling houses that extended vertically
and horizontally over time to become 4-5 story tenement blocks. These were described as ‘some of the most insanitary buildings in the city’ with little light and air, and sanitation in the form of basket privies that were manually serviced through narrow passages between buildings. The second type were tenement blocks built by private enterprise for profit, with shared toilets and water connections and mixed use when facing main thoroughfares. The third were buildings erected by the improvement trust and other public bodies on ‘sanitary lines,’ that were criticized for being insensitive to the preferences of the inhabitants (Burnett-Hurst 1925). Almost all the housing for the laboring classes, except ones built by public bodies, were reported to be grievously inadequate (Indorewala et al. 2016).

In these early decades, informal settlements were referred to as ‘hutment colonies,’ ‘squatter colonies’ or ‘zoppadpattis.’ after this general survey before independence, the Municipal Corporation in 1956-7 undertook a detailed survey and identified three types of ‘slums.’ The first were the permanent and multi-storeyed buildings with outdated sanitary and living standards. Chawls, mostly in the inner city and industrial areas were most commonly identified as this type. The second were authorized, semi-permanent residential buildings that deteriorated because of structural and sanitary conditions. These were in the outer parts of the city. The third type were the ‘unauthorized and insanitary huts put up by vagrants and homeless population on vacant lands not necessarily their own’ (BMC 1964: 91). The BMC noted that the number of hutments in the city was small, and that the ‘main problem’ was with respect to the first two types (Desai and Pillai 1970: 154). The Corporation survey showed that 415,875 people lived in ‘slums’ in the island City, or about 15-18% of its population, and 21,000 people lived in hutments in the island City – less than 1% of its population (ibid.). The Corporation did not carry out a survey in the suburbs that had a large population of hutment dwellers, and estimates suggest that in the mid-1950s hutments provided accommodation to about 5% of the city’s population (Singh and de Souza 1980). By 1968, the population of the suburbs had crossed 2.5 million inhabitants, and at this point, people living in zopadpattis constituted 18% of the city’s population, approximately equal to the number of people living in chawls (Sharma and Narender 1996).

The BMC could also declare ‘redevelopment areas’ and prepare redevelopment schemes for those areas as a whole. With the passing of the National Slum Clearance and improvement act in 1956, slum clearance and resettlement was taken up in Bombay and other cities. This became the official approach to informal settlements in the 1950s and 60s (IPTEHR 2005). In 1958 the first large scale evictions in Bombay were carried out when 4,000 families were displaced from various parts of the city and ‘left to fend for themselves
in the mangrove marshes of Mankhurd’ in the city’s periphery (Mahadevia and Narayanan 2008).

**The New York Phase: Slum Improvement And Up-Gradation, 1970s And 80s**

A growing hutment population that went beyond the capacity of the clearance and housing program, organized movements of slum dwellers against evictions (Das 2003), and the recognition of slum dwellers as ‘a politically sensitive entity’ (Mahadevia and Narayanan 2008) resulted in a move away from the standard approach to slum clearance and resettlement. The important initiatives were the Slum Improvement Cell set up by the BMC in 1969, and a centrally funded Slum Improvement Program (SIP) launched in 1970 to improve basic amenities. In 1974, the state government set up the Maharashtra Slum improvement Board to coordinate the work under this program, and by 1975, the Board had spent Rs. 85 million and improved 200 slum pockets covering half a million slum dwellers (Sivaramakrishnan 1978: 90).

Significantly, only informal settlements were now considered ‘slums,’ and overcrowded, non-standard, and unserviced multistory buildings were identified as ‘dilapidated’ buildings (Kerkar et al. 1981). The slum was no longer a settlement condition to be addressed by municipal intervention – instead it was the mode of building, the type of dwelling and even the status of the dweller that made dwellings unacceptable (Indorewala et al 2016).

Slum improvement was conceived a temporary measure, with the expectation that formal housing will eventually replace them. The Maharashtra Slum improvement Board act considered slums ‘a source of danger to the health, safety and convenience of the slum dwellers and also to the surrounding areas, and generally a source of nuisance to the public’ that needed to be serviced ‘until such time as [they are] removed and persons settled and housed in proper buildings.’ In 1976, during the national Emergency, the first census of hutment dwellers was undertaken, and 630,003 enumerated households were identified.

Despite the legitimacy gained due to the Census, there were parallel efforts to prevent further slum growth through new laws that gave the government more powers to evict squatters. The Slum act of 1971 empowered the government to notify slums and carry out clearance schemes by declaring a ‘slum area’ if it is satisfied that (1) it may be a source of danger to health, safety or convenience of the public in the area or nearby, by reason of lack of amenities, insanitary condition, overcrowding, etc. and (2) if the buildings in any area are unfit for habitation due to dilapidation, overcrowding, faulty arrangement or design, lack of ventilation, light, sanitation, etc. The Slum act was amended in 1978 to provide some protection to occupants from ‘eviction and distress warrants.’ In 1975, the state government enacted the
Vacant Lands act, under which all lands occupied by squatters were assumed as vacant, and dwellers can be evicted for accommodation on an alternate sites. Furthermore, slum dwellers were required to pay compensation for unauthorized occupation of land. a large number of demolitions were carried out in different parts of Bombay using this law (Bhide and Dabir 2010).

The Emergency saw extremely brutal demolitions, and large scale resettlement of slum populations in the eastern and western suburbs. 70,000 people were evicted from Janata Colony (which was formed when slums were evicted from the island city in the 50s and 60s) to make way for housing officials and scientists (Mahadevia and Narayanan 2008; Patel 2010). Thousands of people were evicted in the 1980s, under the Chief Minister Antulay, who declared that all squatters in the city must ‘return to their native places’ if they do not possess photo-passes. In a city- wide effort to evict pavement dwellers, about 10,000 people were evicted before activist groups put a stop to them by getting the Supreme Court to intervene. When the Shiv Sena party gained office in 1985, it promised to once again to clear the city’s 0.5 million pavement dwellers. According to its leader Bal Thackeray, there was ‘no question of showing any humanity “as the city was not the ‘country’s orphanage”’ (Mukhiya 2002).

With the Fifth Five year plan (1975-1980), the role of the government in the provision of low-income housing was re- conceived from a direct provider to a ‘facilitator’ and ‘enabler,’ beginning another shift in housing policy in the country (Bjorkman 2015). Task Force on housing and urban development of the planning Commission in 1983 declared that ‘there is overwhelming evidence to show that efforts to produce affordable housing for the poor by corporate [government] bodies have failed.’ despite ‘striking examples of successful low-cost self-help housing’, it continued, government house construction agencies ‘patterned on the bureaucratic model and adopt a brick and mortar approach to housing’ continue to ‘proliferate’ (U1995). The World Bank’s advocacy and reform linked assistance for self-help housing with a focus on environmental improvement and security of tenure led to the Rs. 282 crore Bombay urban development project (BUDP) in 1985, with two programs in the form of the Slum up-gradation program (SUP) and the Low income Group Shelter program (LISP). Under the Sup, land was given on lease to slum dwellers cooperatives, amenities (costs recovered from dwellers) were provided as well as loans were offered for house up- gradation. The LISP involved making state provided serviced land available to Low income Group (LIG) and Economically Weaker Section (EWS) households for self-building. Only families that had been enumerated in 1976 and 1980 were eligible for programs under BUDP, and those
that arrived later were left out (Panwalkar 1996; IPTEHR 2005; Bank 1985). The BUDP aimed to shift public investment from subsidized apartment construction to programs focused on producing large numbers of serviced plots at lower costs with full cost recovery, halting growth, and finding ways to shift private capital to produce legal affordable shelter for low income families. Affordability and full cost recovery were the underlying principles of the BUDP (ibid). According to the World Bank, the key objectives of its assistance to housing projects was (1) cost recovery from beneficiaries to reduce or eliminate housing subsidies, and (2) to achieve replicability by the private sector.

Though the BUDP fell short of its project targets, some of its objectives from the policy perspective had been achieved by the time the project was completed in 1997. Public sector investment in housing had been downsized, and private supply was on the rise. In 1964, when the first development plan was prepared, the annual housing demand was expected to be about 50,000 housing units in 1960s and 40,000 units in the 1970s (BMC 1964). This was based on a projected population of 7.06 million by 1981. To achieve this target, the plan apportioned 1436 hectares of land for ‘public housing’, where most of this demand would be met, and housing would be built by the state housing Board, public sector agencies for their employees, and cooperative societies. Private supply, which the plan considered ‘not very reliable,’ was expected to fulfill 10-12% of the demand. Formal housing supply for the period between 1974-1991 did not exceed 19,600 units annually, less than 50% of the anticipated demand. Public housing supply dropped from an average 4,222 units (24%) annually between 1957-1964 to 1,522 (7.7%) units in 1983-1991. With the private housing market leaving out the bulk of the population and public sector supply dwindling, the period saw a rapid increase in informal housing supply. According to an estimate by the regional planning authority MMRDA, informal supply provided on average about 45,000 units every year (MMRDA 1995), and by the end of the 1970s, an estimated 44.6% of the city’s population lived in informal settlements (Kerkar et al. 1981).

Despite this situation, the legitimacy of informal settlements was subject to datelines or ‘cut-off dates’ that turned ‘the whole issue of slum growth, eviction, resettlement and management into entirely and solely political activity’ (Mahadevia and Narayanan 2008). Informal settlers had to prove that they have lived long enough in the city to not be evicted.

The Singapore Phase: Enabling Markets, The 1990s

From the mid-1980s, redevelopment with an increased Floor Space Index (FSI) began to become established for informal settlements. in 1985, a major housing improvement program in Mumbai was initiated by the name the Prime Minister’s Grant Project (PMGP). The
project was focused on Dharavi, and aimed to provide new infrastructure and redevelopment housing for beneficiaries in the form of cooperatively owned walk-up apartment blocks. The 1990s saw the coming of the ‘enabling markets’ strategy that was in line with the broader shifts in development policy around the world. According to this strategy, housing was to be re-conceived as an economic and not a public good, and governments were encouraged to reform policies, institutions, and regulations to ‘enable housing markets to work more efficiently.’ A stress on deregulation and decentralization also meant a greater involvement of NGOs and community cooperatives in the development process (Bank 1993; Mukhiya 2001).

Responding to the new policy context of privatization and deregulation, as well as the possibilities offered by redevelopment as opposed to slum up-gradation, the state government launched the Slum redevelopment Scheme (Srd) in 1991. FSi for redevelopment was doubled to invite private developers to rehabilitate slum dwellers in 18 square meter tenements in mid-rise or high-rise buildings. Beneficiary contribution was limited to about 40% of the cost of rehabilitation, and the rest was to be financed through the sale of additional floor space constructed on land freed up after rehabilitating slum dwellers (R. N. Sharma 2007).

The promise of building eight hundred thousand ‘free houses’ in five to six years failed to materialize, and only 157,402 units were produced under the SRA by 2014 (Praja 2015). The 1990s witnessed a massive increase in house demolitions. Between 1994 and 1998, an average 72,000 houses a year, or about 200 huts each day. In 1999, the MCGM was destroying an average of 500 huts a day (Mahadevia and Narayanan 2008). Since liberalization, a growing involvement of middle-class citizen groups and NGOs promoting citizenship based on property- rights and a notional environmentalism, began to seek direct intervention of the judiciary against informal settlements.

The Shanghai Phase: Mumbai’s ‘Make-Over,’ 2000s

In the early years of the new millennium, the aspiration of a ‘Mumbai Make-over’ captured the imagination of business leaders, the political leadership and city managers. India’s prime Minister signaled his acceptance of the international consultancy firm McKinsey’s much publicized recommendations (McKinsey and Bombay First 2003) on restructuring Mumbai: ‘people think of the great changes that have come about in Shanghai. I share this aspiration to transform Mumbai in the next five years in such a manner that people would forget about Shanghai and Mumbai will become a talking point’ (Srivastava 2005). The stark imagery of a ‘world class city’ criminalized the city’s bastis. The Shanghai dream descended
upon the city’s informal settlers with shocking brutality. Between November 2004 and February 2005, the State Government and the Municipal Corporation bulldozed between 80,000-94,000 homes over 44 localities, outdoing their own demolition plans. The BMC claimed that 124 hectares of land was cleared, of which 140 acres fell under ‘No development Zones’ and 125 hectares, cruelly, were areas that were actually reserved in the development plan for public housing or for housing the dis-housed (Mahadevia and Narayanan 2008). The State home Minister candidly declared that ‘rehabilitation... is not the responsibility of the government’ (K. Sharma 2005).

Highest on the priority list of the Mumbai-transformation agenda have been infrastructure projects for new railways, flyovers, highways and link-roads. The partially World Bank financed Mumbai urban transport project (MUTP) and the Mumbai urban infrastructure project (MUIP) have displaced tens of thousands of hutment dwellers in the city. as the implementing agency MMRDA has constructed rehabilitation blocks for displaced dwellers, in a huge number of state sponsored high rise housing construction, ‘unprecedented in modern times’ (Nainan2008). By awarding development rights as compensation to private landowners to build rehabilitation units, the state government could raise 42% of the project cost by offering tdr to land owners, much to the satisfaction of the World Bank (Nainan 2008; Bank 2004). The MUTP displaced 19,847 households (Bank 2011), making it the largest urban displacement caused by a World Bank aided project in India. The combined number of households displaced by the MUTP and MUIP is about 25,000 (Bhide 2014: 53). Estimates suggest that the MUTP & MUIP along with the Metro rail project or Mass Rapid Transit System (MRTS) and the airport Modernization project will result in the displacement of 136,000 households (Modi 2009), making it one of the largest forced relocations in recent times (Nainan 2008).
4. METHODOLOGY

This chapter describes the methodology deployed for the study. The methodology of any thesis forms the heart of a research. This chapter lays the foundations and the principles that the study had incorporated. This chapter discusses the tools and methods that were deployed through the study in order to obtain the results. The chapter is structured as follows. The chapter starts off by introducing way that the study was conceptualised along with a brief overview of the study area and the methods of selecting the area, which includes the sampling strategy adopted. It then moves on to the research objectives of the study and the methods and tools deployed to meet the same objectives. It further describes the methods deployed during the process of data collection along with the procedure and the rationale for the same.

4.1 Conceptualisation & Focus of Study

Slum dwellers, and their relocation experiences are often researched in the country, especially in the case of urban areas such as Mumbai; however, there is scant information available about the quality of housing of residents living in SRA projects. Also, a paucity of research was observed with respect to mental well-being of these residents, with earlier research simply being limited to assessing mental illness.

As such, the areas of inquiry for this study focused on these two factors: Housing Quality, and Mental Well-being, in addition to factors that might affect the same for residents of open slums and SRA projects. The stakeholders considered were primarily residents of these slums.

4.2 Study Area & Sampling Procedure

Nearly 52 lakh people in Mumbai live in slums, in conditions that lack security, peace and dignity. Almost 42% of Mumbai’s housing comprises of slums (Praja, 2014). In nine out of twenty four wards, more than 50% of the population lives in slums. Out of the 11.36 lakh households resident in slums or SRA colonies, nearly 2.34 lakh are in Mumbai’s H(East) ward, located in the western suburbs of the city, where the study area was selected.
Figure 1: H (East) Ward Map Source: Slum Rehabilitation Authority, Mumbai
The sampling was deployed for collecting data at individual level. The sampling method used for selection of households to be studied involved non-probabilistic sampling in particular the convenience sampling method. Data were collected from several open slums and SRA colonies in Mumbai’s H(East) ward. A map of visited locations is shown below.

Figure 2: Sites of study
Locations marked in yellow stars are the ones visited for this study. These locations include slums and SRA colonies in the locations mentioned on the following page.
• Kunchi Karve Nagar,
• Kalina Santacruz,
• Azad Nagar,
• Kadamwadi (Vakola),
• Yashwant Nagar (Vakola),
• Datta Mandir Road Slum,
• Shantilal Comopund,
• Maratha Colony,
• Davri Nagar (Vakola),
• Dhobi Ghat (Santacruz),
• Hanumna Tekdi,
• Vile parle East Slum,
• Agripada,
• Prabhat Colony Road, and
• Golibar Slums and SRA

Participants
Data were collected from two independent samples. Cross-sectional data were obtained from residents (n=122) in open slums (n=61) and of SRA housing (n=61) of Mumbai city, H (East) ward. The sample was composed of predominantly low-income families. The sample composed of individuals from the major religions of the country (Hindu, Muslim, Christian, and Buddhist), and was predominantly female.

4.3 Research Objectives

1. To identify housing quality differences between SRA housing and open slums
2. To identify differences in mental well-being of residents in SRA housing and open slums
3. To enumerate factors associated with the mental well-being of residents in the two types of housing under study.
4. To evaluate the extent to which the housing quality difference, if any, affects the mental well-being of the sample population in SRA housing and open slums.

4.4 Research Questions

1.1 How do houses/residences differ in quality between SRA housing and open slums?
1.2 Does slum rehabilitation enhance housing quality for residents moving from open slums?
2.1 Is there a difference in mental well-being between residents of open slums and SRA housing?
3.1 What are the biopsychosocial factors associated with mental well-being of residents?
4.1 Does change in housing quality help explain the differences in mental well-being of residents living in slum housing and SRA housing?
4.2 What factors affect the relation between housing quality and mental health?

4.5 Procedure

Data on housing quality, psychological distress, and background demographic information were collected in doorway interviews, over a period of three months between May 2018, and September 2018. A standardized housing scale was adapted to assess housing quality. A structured interview in local language Hindi was conducted, The interview included standardized measures of mental well-being, as well as perceived satisfaction with services offered with respect to electricity, water, protection from crime, overcrowding, etc. Complete interview took approximately 45 minutes to an hour.

4.6 Operational Definitions

Housing Quality
This variable was measured using a standardized aggregate housing scale, based on scales related to the material of manufacture of roof, floor, and exterior walls, area of the dwelling, presence of a separate kitchen, cooking performed on modern sources of energy, presence of a separate flushing toilet in the premises, as well as the source of drinking water for the household. A higher score indicates fewer housing problems, and thus better housing quality score.

Mental Well-being
Mental well being was measured using the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS). WEMWBS was developed by an expert panel drawing on current academic literature, qualitative research with focus groups, and psychometric testing of an existing scale. It has been validated on a student and representative population sample. Content validity has been assessed by reviewing the frequency of complete responses and the distribution of responses to each item. Confirmatory factor analysis was used to test the hypothesis that the scale measured a single construct. Internal consistency was assessed using Cronbach’s alpha. Criterion validity was explored in terms of correlations between WEMWBS and other scales and by testing whether the scale discriminated between
population groups in line with pre-specified hypotheses. Test-retest reliability was assessed at one week using intra-class correlation coefficients. Susceptibility to bias was measured using the Balanced Inventory of Desired Responding.

WEMWBS is a measure of mental well-being focusing entirely on positive aspects of mental health. As a short and psychometrically robust scale, with no ceiling effects in a population sample, it offers promise as a tool for monitoring mental well-being at a population level. A Cronbach’s alpha score of 0.89 (student sample) and 0.91 (population sample) suggests some item redundancy in the scale. WEMWBS showed high correlations with other mental health and well-being scales and lower correlations with scales measuring overall health. Its distribution was near normal and the scale did not show ceiling effects in a population sample. It discriminated between population groups in a way that is largely consistent with the results of other population surveys. Test-retest reliability at one week was high (0.83). Social desirability bias was lower or similar to that of other comparable scales.

In addition to the above mentioned variables, demographic information from the respondents was also collected. That included age, caste, family structure, occupational status, education attainment, household income, and housing cost. These variables helped to create a demographic profile of the participants in the study.

4.7 Data Analysis
The quantitative data was analysed by means of coding in Microsoft Excel, and IBM SPSS v23.

4.8 Inclusion and Exclusion Criteria
The basic inclusion criteria was the member of the households belonged to an open slum, or an SRA colony. The other criterion kept in mind was that the respondent was an adult, over 18 years of age.

4.9 Ethical Considerations
The ethical considerations were kept in mind through the entire data collection process. The interviews were conducted by obtaining a written consent, through which the respondent was made aware of the intentions of the study. On obtaining the consent, the interview was conducted. The respondents were given an option of not answering a question or withdrawing from the interview at any given point in time.
The other ethical consideration kept in mind was anonymity in mind. The interviews ensured the responses provided by each of the respondents were anonymous and the name of the respondent was not recorded.

4.10 Challenges

The study was posed with numerous challenges. The primary factor that hindered the study was the limited period of time that was available to give effect to the study, which limited the data collected for an in-depth understanding of the issues addressed in the study. The next challenge was in terms of convincing the participants to answer questions, which was difficult to obtain, but managed by assistance from outreach worker.
3. FINDINGS & DISCUSSION

The analytic strategy was to assess hypothesized difference in housing quality between the two types of residence: open slum and SRA housing. The two groups residing in slum housing and SRA housing were then compared on a variety of variables. Subsequently, their mental well-being scores were studied, and an attempt was made to discover any hypothesized difference between the two residence types. Secondly, the relationship between housing quality and mental well-being scores were assessed, in order to determine the role of housing quality as an explanatory mechanism between housing site and mental well-being.

5.1 Basic Demographic Information

Here is a compiled summary of the demographic information gathered in this study. Total study population was 122, with 61 respondents in Open Slums, and 61 in SRA housing. Chief demographic variables are analysed further after this table.

<table>
<thead>
<tr>
<th>Demographic Variable</th>
<th>Open Slum</th>
<th>SRA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-24 years</td>
<td>3 (4.9%)</td>
<td>9 (14.8%)</td>
</tr>
<tr>
<td>25-35 years</td>
<td>16 (26.2%)</td>
<td>10 (16.4%)</td>
</tr>
<tr>
<td>35-44 years</td>
<td>13 (21.3%)</td>
<td>13 (21.3%)</td>
</tr>
<tr>
<td>45-54 years</td>
<td>13 (21.3%)</td>
<td>10 (16.4%)</td>
</tr>
<tr>
<td>55-64 years</td>
<td>15 (24.6%)</td>
<td>17 (27.9%)</td>
</tr>
<tr>
<td>65 years and older</td>
<td>1 (1.6%)</td>
<td>2 (3.3%)</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>10 (16.4%)</td>
<td>10 (16.4%)</td>
</tr>
<tr>
<td>Female</td>
<td>51 (83.6%)</td>
<td>51 (83.6%)</td>
</tr>
<tr>
<td><strong>Religion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hindu</td>
<td>32 (52.5%)</td>
<td>13 (21.3%)</td>
</tr>
<tr>
<td>Muslim</td>
<td>11 (18%)</td>
<td>47 (77%)</td>
</tr>
<tr>
<td>Christian</td>
<td>3 (4.9%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Buddhist</td>
<td>15 (24.6%)</td>
<td>1 (1.6%)</td>
</tr>
<tr>
<td><strong>Highest Completed Educational Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate or Higher</td>
<td>4 (6.6%)</td>
<td>2 (3.3%)</td>
</tr>
<tr>
<td>Higher Secondary/Diploma</td>
<td>15 (24.6%)</td>
<td>12 (19.7%)</td>
</tr>
<tr>
<td>Middle School</td>
<td>28 (45.9%)</td>
<td>24 (39.3%)</td>
</tr>
<tr>
<td>Primary School</td>
<td>11 (18%)</td>
<td>16 (26.2%)</td>
</tr>
<tr>
<td>Illiterate</td>
<td>3 (4.9%)</td>
<td>7 (11.5%)</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>42 (68.9%)</td>
<td>45 (73.8%)</td>
</tr>
<tr>
<td>Single</td>
<td>5 (8.2%)</td>
<td>4 (6.6%)</td>
</tr>
<tr>
<td>Separated/Divorced</td>
<td>6 (9.8%)</td>
<td>2 (3.3%)</td>
</tr>
<tr>
<td>Demographic Variable</td>
<td>Open Slum</td>
<td>SRA</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------</td>
<td>-------------</td>
</tr>
<tr>
<td>Widowed</td>
<td>8 (13.1%)</td>
<td>10 (16.4%)</td>
</tr>
<tr>
<td>Parental Status</td>
<td>58 (95.1%)</td>
<td>60 (98.4%)</td>
</tr>
<tr>
<td>Employment Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>28 (45.9%)</td>
<td>11 (18%)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>33 (54.1%)</td>
<td>50 (82%)</td>
</tr>
<tr>
<td>Nature of Employment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labour</td>
<td>3 (10.71%)</td>
<td>4 (36.36%)</td>
</tr>
<tr>
<td>Services</td>
<td>22 (78.57%)</td>
<td>4 (36.36%)</td>
</tr>
<tr>
<td>Sales/Business</td>
<td>3 (10.72%)</td>
<td>3 (27.28%)</td>
</tr>
</tbody>
</table>

Gender Distribution

<table>
<thead>
<tr>
<th>Location (Open Slum/SRA)</th>
<th>Frequency</th>
<th>%</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Slum</td>
<td>Male</td>
<td>10</td>
<td>16.4</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>51</td>
<td>83.6</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>61</td>
<td>100.0</td>
</tr>
<tr>
<td>SRA</td>
<td>Male</td>
<td>10</td>
<td>16.4</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>51</td>
<td>83.6</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>61</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The gender distribution was equal across both groups. Both sets of observations comprised of 61 total respondents, out of which 51 were females, and 10 were males. While sex ratio of slums in India stands at 928 females for every 1000 males (GoI, Slums in India, 2015), this distribution of gender that is skewed heavily towards females is determined to be attributable to the fact that the study was conducted on working days between 9 am and 4 pm, which means that most, if not all, employed males were not at home, with the few males being captured in this study being interviewed while they were headed to work, or dropping off their child/children at the local Anganwadis.

Age groups

With regard to age, groups were set at ranges of 10 years starting from 18 years, as follows: 18-24 years, 24-24 years, 35-44 years, 45-54 years, 55-64 years, and finally 65 years or older. The data gathered is shown in figures below.
As can be seen, a vast majority of respondents were adults between 25 and 65 years of age across both groups. A distinctly low number of respondents were from the elder community. This is potentially due to reluctance to participate in research study, as well as level of rapport built with the outreach worker, whose assistance was taken when conducting this study. The vast majority of respondents being of working age is important to understand when we look at employment levels in these locations, which can further help us make relations with the ultimate goal of determining factors associated with mental well-being.

**Employment Status**

As is evident from the figures, employment status differs greatly between the two groups of respondents. There is a significantly higher level of unemployment in SRA colonies, with
over 80% of respondents being either currently unemployed, or retired. Employment levels assessed full-time, as well as part-time employment as the same. This change cannot be attributed to the gender distribution, which is consistent across both groups, but can be due to the religious distribution of respondents, as well as the nature of employment.

The industrial labour sector comprises all jobs that require manual labour, or are in any labour intensive industry of Mumbai. The Sales/Business sector primarily comprises of hawking goods, as well as freelancers and shopkeepers. As can be seen, most of the employed respondents in the open slum group are in the services sector, which, considering the gender distribution comprises working as female maids as a major component. Most employed respondents of open slums that were female reported that they were working part-time as maids, while a select few women that were educated at a graduate level, were employed as executive assistant, and other similar jobs.
However, this pattern is not evident in respondents from the SRA group. While gender distribution can account for the low number of individuals involved in industrial labour and sales/business, the vast majority of females in SRA group are still not employed in the services sector. Reasons for such a discrepancy can be made evident when we look at the religious distribution of respondents.

**Distribution based on Religious Affiliation**

![Distribution based on Religious Affiliation](image)

Figure 6: Religious Affiliations of the two groups
Distribution based on religious affiliations can explain several of the employment patterns evident in the earlier discussion. The SRA group has a disproportionately high number (77.2%) of respondents that are adherents to Islam, and this makes clear the reason for lower employment levels in this group, especially in the services sector. Also evident is the fact that the SRA colonies that visited had no respondents that were adherents of Christianity. The higher than average presence of Buddhists in the open slum group is due to some Scheduled Caste respondents being neo-Buddhists, and the fact that two of the slums visited were predominantly Buddhist.

![Figure 7: Employment Status distributed over the religious affiliations (Open Slums)](image-url)
Educational Level

Rather than look at mere literacy, as the Census (2011) does, it was determined that it would be valuable to determine the level of education attained by most respondents. This educational level data can also help us make connections with the employment status of respondents, in order to justify the pattern evident in the earlier discussion.
The data collected on educational level shows similar patterns across both groups. A vast majority of respondents are middle-school dropouts, with less than 30% of respondents having completed Higher Secondary level in either group. Illiteracy is also higher in SRA respondents, but it is important to note the age distribution of those that are illiterate, as older individuals are potentially more likely to have never attended school in the rural areas of their origin. As such a clustered chart was studied to determine educational status, based on age groups.
Figure 10: Educational Status distributed over age groups for the two groups

It can now be seen that in open slums, the younger adults are more likely to have completed higher secondary level, and progressed to a graduate level even. In SRA housing however, it...
is observed that even in younger respondents, there is a high incidence of drop-outs at middle school level, and worryingly so, at the primary school level. With this, the employment patterns observed earlier, are much more evident, and a potential reason for the pattern being established, in relation to educational level, and religion.

**Household Income**

<table>
<thead>
<tr>
<th>Demographic Variable</th>
<th>Open Slum</th>
<th>SRA</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>43.69</td>
<td>43.20</td>
<td>0.197</td>
<td>120</td>
<td>0.844</td>
</tr>
<tr>
<td>Income</td>
<td>4825.61</td>
<td>4686.81</td>
<td>0.339</td>
<td>120</td>
<td>0.735</td>
</tr>
</tbody>
</table>

Respondents were primarily of the low-income category, with mean monthly household income in both open slum and SRA categories falling under Rs 5000. However, it was observed that mean income in open slums was slightly higher than that of SRA respondents, but this change was not determined to be significant at p=0.05.

**Association of Variables with the Location of Residence**

A chi-square tests were conducted to determine whether the associations between dependent variables, such as literacy level, employment status, marriage and parental status, etc. developed earlier were significant or not. The results are summarised in the table below

<table>
<thead>
<tr>
<th>Demographic Variable</th>
<th>Open Slum</th>
<th>SRA</th>
<th>Pearson chi-sq</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marriage status</td>
<td>68.85%</td>
<td>73.77%</td>
<td>2.437</td>
<td>3</td>
<td>0.487</td>
</tr>
<tr>
<td>Parental Status</td>
<td>95.08%</td>
<td>98.36%</td>
<td>1.034</td>
<td>1</td>
<td>0.309</td>
</tr>
<tr>
<td>Literacy Level</td>
<td>95.08%</td>
<td>88.52%</td>
<td>3.834</td>
<td>4</td>
<td>0.429</td>
</tr>
<tr>
<td>Employment Status</td>
<td>45.90%</td>
<td>18.03%</td>
<td>10.892</td>
<td>1</td>
<td>0.001</td>
</tr>
</tbody>
</table>

As can be seen, only employment status has a significant association with the location of the respondent. All others show no significant association. This is consistent with our observations related to employment. The vast majority of unemployed SRA respondents is an important factor in upcoming discussions.
Housing Quality

Using an aggregate scale that included an assessment of the type of floor, roof, walls, the total floor area, presence of kitchen, toilet, and source of water, and cooking fuel (all on a 0 to 2 or a 0 to 3 scale), a total housing quality scale was developed. The findings show that residents in SRA housing show a significantly higher mean total housing score, as compared to those in open slums. This in turn implies that housing quality is significantly better in SRA projects, than those in open slums (16.1 vs 9.3). Is this a predictor for mental well being?

Not particularly. The total mental well-being scores show no significant difference between the two groups that are being analysed. With practically the same mean scores across the two groups, it was determined that mental well-being of both open slum and SRA residents is practically similar.

Table 5: Independent Sample t-tests of scale scores vs location

<table>
<thead>
<tr>
<th>Demographic Variable</th>
<th>Open Slum</th>
<th>SRA</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing Quality Score (Higher is better)</td>
<td>9.295 (3.23)</td>
<td>16.098 (1.22)</td>
<td>-15.38</td>
<td>120</td>
<td>0</td>
</tr>
<tr>
<td>Mental Well-being Score (higher is better)</td>
<td>39.56 (6.051)</td>
<td>39.39 (4.51)</td>
<td>0.17</td>
<td>120</td>
<td>0.866</td>
</tr>
</tbody>
</table>

Out of 122 individuals sampled, with 61 from open slums and 61 from SRA building, the final Housing Quality scores show a significant difference (p=0) in means between respondents from Open Slums and from SRA housing. However, the mental well-being scores do not show a significant difference in means between the two groups (p=0.866).

Components of Scores

It is imperative to determine any potential patterns in the components of these scores, that can reflect the changes in individual total scores.
Figure 11: Cooking location distribution over the two groups
For example, all SRA houses have a dedicated kitchen, which automatically makes the score for all households higher than those for many residents in open slums, with over 12% of them not even cooking indoors.

Figure 12: Main material of roof, over the two groups
Similarly, all SRA houses are made of concrete, and thus score higher than many open slums
households over 30% of households in open slums do not possess pucca roofs, exposing themselves to the vagaries of nature, with only metal sheets, or wooden/plastic roofs to protect them.

**Floor Area**

It is however, in the matter of floor areas, that the difference really becomes evident.

![Floor Area distribution over the open slum and SRA groups](image)

Figure 13: Floor Area distribution over the open slum and SRA groups

As can be seen, extremely small living spaces in open slums are quite prevalent, with over 20% of households living in spaces less than 226 sq ft, or smaller than 15ft x15 ft box. Over 13% of the open slum respondents lived in spaces that were less than 150 sq ft. With an average household size of 4.68, this gives each individual merely 48 sq ft of space for living, or the equivalent of a 6ft x 7ft box.

Meanwhile in SRA projects, the MMRDA and SRA regulations state that the minimum size of residences would be 269 sq ft. As such, it is interesting to note the preponderance of hous-
es that are significantly larger than this minimum size. Quite often, some households get corner flats that are double the size of most other flats, or some households merge two adjacent flats together, in order to increase living space.

In such households, it is also important to determine the toilet facilities. This variable is doubly important due to the vast majority of respondents being female, and the presence of an indoor, flushing toilet, is of great importance. As can be seen a vast majority of houses in open slums do not possess an indoor latrine, and are forced to use shared community latrines, or even open pits (near railway tracks) for defecation. What is also odd to note, is that a couple of SRA households did not possess working toilets at the time of this study, and so residents of the household were forced to defecate in the open, due to absence of a nearby community latrine.

**Mental Well-being**

As mentioned earlier, no significant difference in mental well-being scores were determined between the two groups. This result is surprising; because it was expected that mental well-being of residents would improve upon moving from open slums to SRA housing.
Considering the living conditions, it would have been evident that as mental well-being is positively associated with the urban planning according to literature, it is not so evident in our findings. Both open slum respondents and SRA housing respondents obtained practically the same mean scores, which leads us to infer that either housing quality, as measured in this study, is not a variable that can explain a resident’s well-being, an/or there are other confounding factors at play.

When performing a correlation test, based on parametric and non-parametric understanding of housing quality, and mental well-being, it was determines that there did not exist a significant correlation between the housing quality and mental well-being of residents in either locality.

Table 6: Correlation between Housing quality and Mental well-being (parametric and non-parametric)

<table>
<thead>
<tr>
<th></th>
<th>Pearson Correlation</th>
<th>Spearman Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>HQ vs MWB</td>
<td>0.049 (p=0.591)</td>
<td>0.014 (p=0.877)</td>
</tr>
</tbody>
</table>

What this implies is that while housing quality might have changed between the two groups, the mental well-being did not change with it. Literature shows that cleanliness and clutter, privacy, overcrowding, and presence of hazards, are also significant components of housing quality (Vaid, 2011), that were not assessed in this study. Also, while structural quality was assessed in this study using the presence or absence of certain materials, the actual quality of the structure could not be determined. As part of urban planning, no measures existed during the time of this study to determine the green space, playing area, amount of sunlight in the housing quarters, as well as pollution.

Pictures taken during this survey make this point much clearer. The surroundings of the SRA tenements are actually in much worse condition than those in open slums, with significant garbage being tossed, due to lack of garbage removal services. The following picture is from the window of the Anganwadi located within the SRA premises.
On the other hand, the transit camps that were erected to house slum dwellers during demolition and construction of the SRA apartments, had not yet been demolished, leading to squatters occupying these houses as well, in addition to garbage and sewage collecting nearby, due to lack of basic services by municipality (as this location is not notified anymore).
Respondent satisfaction with respect to facilities is quite low. While sanitation facilities have been addressed earlier, the major complaint of residents is provision of drinking water.
Residents complained of the fact that starting at four in the morning, nearly all members of the household of open slums are involved in collecting water for the household. The absence of a consistent source of water is a major concern for most residents. Provision of electricity, food, and medical services were reported as satisfactory by residents, while cleanliness and water arrangements were cause of greatest distress.

In SRA housing, it was cleanliness that caused the greatest distress, enough to supersede the advantages coming from provision of water, electricity, and better structural quality as well. Garbage collection was inconsistent in new SRA housing in Golibar and Khar, and residents resorted to throwing all garbage at the gate, while sewage and sanitation facilities were existent, but non-functional.

All these are determined to be factors that the low mental well-being scores of SRA housing could be attributed to.

**Summary of findings**

This study compares two groups of adult respondents living in open slums and SRA housing of H(east) ward of Mumbai. The context and population under study affords a preliminary evaluation of slum rehabilitation policies in developing countries. It was hypothesized that the housing quality in SRA colonies and projects would be better in comparison to open slum neighborhoods. It was also hypothesized that mental well-being would be more positive in SRA housing in comparison to open slums, on account of better living conditions. Finally it was hypothesized that some of the expected differences in mental well-being between slum and SRA housing would be accounted for by the housing quality differences.

Results of this study support the first hypothesis, but do not support the second and third hypotheses.

As two groups with different housing conditions are compared in this study, the results depend heavily on the assumption that the two groups are comparable on various demographic aspects. To check the validity of this assumption, t-tests were used to see if the groups are different on characteristics like age, employment, education, marital status, income and the like. This analysis shows that there is no statistically significant difference in the group on most characteristics. But they do differ in employment status. There are more illiterate respondents in SRA housing, as well as more unemployed respondents in SRA housing as well. This employment difference may be due to location of these different housing facilities.

There are many employment opportunities around the area where the slums are located,
whereas public housing does not have that benefit. This difference is also possibly attributable to religious affiliation, as respondents in SRA housing were overwhelmingly skewed towards one specific faith.

1. Difference in housing quality between slum and SRA housing

The results of this cross-sectional study indicated that there are significant differences in the overall housing quality between the slum housing and SRA housing under study. Housing quality in SRA buildings is better in comparison to slum housing. Slum rehabilitation policy appears to have been successful in providing comparatively better living conditions in the case under study. Further evaluations in multiple sites are needed to generalize this result. The analysis of specific housing quality dimensions also helps us delineate the areas where public housing has improved and areas where there is further scope for improvement. As determined from responses of individuals, structural quality and basic services have considerably improved but cleanliness, clutter, and crowding could still be improved.

2. Difference in mental well-being between slum and SRA housing

Results of this study indicated that there are no significant differences in the overall mental well-being scores of the respondents living in slum housing and SRA housing. This result may be due to the need for a more sensitive perceived stress scale. The magnitude of difference in scores between two groups may not have been captured by the scale used as the standard deviation observed in the sample was much lower than reported in previous normative studies in the University of Warwick studies.

3. Does Housing quality explain variation in mental well-being characteristics?

Results of this study do not indicate that housing quality can satisfactorily explain any variation in mental well-being, because the variation was not significant to begin with. It is possible that other variables that were not captured by housing quality could account for the similarity in mental well-being, when housing quality so obviously improved from open slums to SRA housing.
The evidence provided by this study suggests that people living in slum neighborhoods are subjected to poorer living conditions in comparison to those living in SRA housing provided under slum rehabilitation policies in Mumbai, India. However, policy makers should further aim to improve the basic services available to residents of public housing. This study also suggests that people in SRA housing report similar mental well-being scores to those in open slums. This finding helps to make a case for policies to focus on improving the housing quality in low-income neighborhoods for higher well-being of residents. This data also underscores the potential interconnections between physical and social living conditions and well-being of its residents.

**Policy Implications**

Questions about effects of housing quality are only partly academic; it is a field that also derives value from societal questions that are going on inside society/community (practice), relevant to policymakers, architects, urban planners, environmental planners (Brown, 2004). The expected contributions to quality of life of a given project increasingly play a role in the social acceptance of decisions, plans and planning. One of the important questions in the choices of planners and policy makers is: what is the effect of my (planning and designing) measures/interventions on environmental quality and well-being?

The findings in this study show that there is room for improvement in providing better basic services and improving crowded conditions in public housing. Also, better services might help in further improvement in mental health in residents of public SRA housing. It is incumbent upon policy-makers and researchers to recognize the full complement of qualities and dimensions of the slum communities being dismantled as well as the meanings and functions that such communities play in residents’ lives in order to evaluate properly the full impact of the rehabilitation program. Policy makers might consider integrating social programs along with housing improvement to counter the ill-effects of rehabilitation on neighborhood social ties. Planners and designers can focus on site planning and design features that are conducive to creating a richer social fabric by fostering social interaction

**Limitations of Study**

This study does not completely capture the quality of housing as it pertains to environmental factors, such as cleanliness, hazards, and actual quality of materials used to build the residence. Also, the two groups studied may have different demographic and well-being
characteristics to begin with. Also, people may have self-selected themselves into groups of slum housing or public housing. People rehabilitated into public housing may have been a self-selected group having characteristics that could affect well-being such as education, income, or better social network. Comparability of these two groups can be questioned due to the quasi experimental research design and thus it limits the internal validity of the findings.

It is possible that a selection bias led to certain kinds of respondents participating in the study, potentially skewing the results. For example, sampling method could have led to more child-bearing women, participating in the study owing to the nature of work of the outreach worker. Moreover, only one case for each slum neighborhood and public housing was examined under this study. This brings the generalizability or external validity of the study into question. Due to this limitation, caution should be used in applying these findings across contexts and populations.

**Future research**

The limitations of this study warrant further research examining housing quality and well-being. A longitudinal study would be a more robust research design where one group is followed as they move from one housing condition to another and measured on independent and dependent variable pre and post move. This within-subjects comparison research design would allow the researcher to control for a variety of potentially confounding variables. By comparing the same individual from pre- to post-move, many variables can be held constant including personality, socio-economic status, ethnicity, and family composition. Further research can include a multi-method approach with both objective and subjective measures of well-being characteristics. Subjective indicators allow us to gain insight into the well-being/satisfaction of a person, and insight into what people consider important. They contribute to the commitment of people to their environment, and to the creation of public support.

Future research can also explore underlying links in the association between housing quality and physical health, mental well-being, perceived stress, and quality of life.
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ANNEXURES
A Comparative Study of Housing Quality and Mental Well-being of residents—in SRA Housing & Open Slums

Interview Schedule

Date: _______________                                                                                   Sr No: ______
Name (Optional): ________________
Location (circle): Open Slum / SRA                                                                       Area: _______________

Section A

<table>
<thead>
<tr>
<th></th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Female, Male, Third Gender, Prefer to not say</td>
</tr>
<tr>
<td>Age in completed years</td>
<td>____________ years</td>
</tr>
<tr>
<td>Religion</td>
<td>Atheist, Hindu, Muslim, Christian, Buddhist, Sikh, Other (pl specify) ________ Prefer to not say</td>
</tr>
<tr>
<td>Caste/Tribe</td>
<td>Caste __________, Tribe __________, Prefer to not say</td>
</tr>
<tr>
<td>Is this a Scheduled Caste/Tribe?</td>
<td>Yes, No, Don't Know, Not Applicable</td>
</tr>
<tr>
<td>Educational Status</td>
<td>Post-graduate, Graduate, Higher Secondary/Diploma, Middle School (till 8th Std), Primary School (till 5th Std), Home-Schooled, Illiterate</td>
</tr>
<tr>
<td>Marital Status</td>
<td>Married for ________ years, Single, Divorced/Separated, Widowed</td>
</tr>
<tr>
<td>Are you a parent?</td>
<td>Yes (#of children) ________, No</td>
</tr>
<tr>
<td>Number of HH members</td>
<td></td>
</tr>
<tr>
<td>Employment Status</td>
<td>Currently Employed (Full-time), Currently Employed (Part-time)</td>
</tr>
</tbody>
</table>
| Nature of Employment (field of work) (What is your occupation, that is, what kind of work do you mainly do?) | Industry _________  
| | Services _________  
| | Sales _________  
| | Other _________  

| Do you usually work throughout the year, or do you work seasonally, or only once in a while? | THROUGHOUT THE YEAR  
| | SEASONALLY/PART OF THE YEAR  
| | ONCE IN A WHILE  

| Are you paid in cash or kind for this work, or are you not paid at all? | Cash only  
| | Cash and Kind  
| | Kind only  
| | Not paid  
| | Prefer to not tell  

| Place of Origin | Local (from Mumbai)  
| | From MH (except Mumbai) _________  
| | From another state _________  

| Reason for migration? | NA  
| | _________ (work, study, marriage, illness, etc.)  

**HOUSEHOLD QUESTIONS**

| Type of House | Kuccha  
| | Pucca  
| | SRA alloted  

| Main material of Floor | MUD/CLAY/EARTH  
| | RAW WOOD PLANKS  
| | BRICK  
| | STONE  
| | CERAMIC TILE  
| | CEMENT  
| | OTHER ____________  

| Main material of roof | NO ROOF  
| | MUD  
| | PLASTIC/POLYTHENE SHEETING  
| | RAW WOOD PLANKS  
| | METAL  
| | ASBESTOS SHEETS  

58
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
</table>
| Main material of Exterior Walls                                       | o RCC/RBC/CEMENT/CONCRETE  
o ROOFING SHINGLES  
o TILES  
o SLATE  
o BRICK  
o OTHER__________ |
| What is the square footage of this residence? (to the nearest 100 sq ft) |                                                                       |
| Is this house owned by someone in the family?                         | o Owned  
o Rented                                                                 |
| If owned by someone in family, who owns the house?                    | o Male Member  
o Female Member  
o Both  
o Don’t know  
o Not Applicable |
| Do you have a separate room which is used as a kitchen?               | o Yes  
o No                                                                 |
| Is the cooking usually done in the house, in a separate building, or outdoors? | o In the house  
o In a separate location  
o Outdoors                                      |
| In this household, is food cooked on a stove, a chullah or an open fire? | o Stove  
o Chullah  
o Open Fire  
o Other                                                                                    |
| What type of fuel does your household mainly use for cooking?         | o Electricity  
o LPG  
o Kerosene  
o Coal/Charcoal  
o Wood  
o No food is cooked in Household  
o Other__________ |
| What is the main source of drinking water for members of your household? | o PIPED INTO DWELLING  
o PUBLIC TAP  
o HAND PUMP  
o RAIN WATER  
o TANKER TRUCK  
o CART WITH SMALL TANK  
o BOTTLED WATER |
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
</table>
| Where is the water source located?                                      | o In own Dwelling  
                               o Elsewhere                                                           |
| How long does it take to go there, get water, and come back in one trip? | o Minutes _________  
                               o Delivered to Dwelling (Cost per month _____)  
                               o On the premises  
                               o Don’t Know                                                     |
| Who usually goes to this source to fetch the water for your household?  | o ADULT WOMAN  
                               o ADULT MAN  
                               o FEMALE CHILD age ______  
                               o MALE CHILD age ______  
                               o OTHER                                                        |
| What kind of toilet facility do members of your household usually use?  | o FLUSH OR POUR FLUSH TOILET  
                               o FLUSH TO PIPED SEWER SYSTEM  
                               o FLUSH TO SOMEWHERE ELSE  
                               o FLUSH, DON’T KNOW WHERE  
                               o OPEN PIT  
                               o NO FACILITY/USES OPEN SPACE OR FIELD                          |
| Do you share this toilet facility with other households?                | o Yes  
                               o No                                                                |
| How many households use this toilet facility?                           | o Num of HHs ___________  
                               o Don’t know                                                        |
| Does your household have:                                               | o ELECTRICITY  
                               o MATTRESS  
                               o CHAIR  
                               o COT/BED  
                               o TABLE  
                               o ELECTRIC FAN  
                               o RADIO  
                               o TELEVISION  
                               o SEWING MACHINE  
                               o MOBILE TELEPHONE  
                               o INTERNET  
                               o COMPUTER  
                               o REFRIGERATOR  
                               o AIR CONDITIONER/COOLER  
                               o WASHING MACHINE  
                               o PRESSURE COOKER  
                               o BICYCLE  
                               o MOTORCYCLE/SCOOTER  
                               o ANIMAL-DRAWN CART  
                               o CAR  
                               o WATER PUMP                                                      |
Section B

WEMWBS:

Please tick the box that best describes your experience of each statement in the last two weeks.

<table>
<thead>
<tr>
<th>Statement</th>
<th>None of the time</th>
<th>Rarely</th>
<th>Some of the Time</th>
<th>Often</th>
<th>All of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>I've been feeling optimistic about the future</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I've been feeling useful</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I've been feeling relaxed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I've been feeling interested in other people</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I've had energy to spare</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I've been dealing with problems well</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I've been thinking clearly</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><em>I've been feeling good about myself</em></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I've been feeling close to other people</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I've been feeling confident</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><em>I've been able to make up my own mind about things</em></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I've been feeling loved</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I've been interested in new things</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I've been feeling cheerful</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Section C

How satisfied are you with your current arrangement of water availability? Please rate, on a scale of 1 to 7, with 1 being not at all satisfied, and 7 being Extremely Satisfied.
In what ways do you think this level might increase? Give a brief response.

How satisfied are you with your current arrangement of sanitation/toilet facilities? Please rate, on a scale of 1 to 7, with 1 being not at all satisfied, and 7 being Extremely Satisfied.
In what ways do you think this level might increase? Give a brief response.

How satisfied are you with the current cleanliness levels? Please rate, on a scale of 1 to 7, with 1 being Not at all Satisfied, and 7 being Extremely Satisfied.
In what ways do you think this level might increase? Give a brief response.

How satisfied are you with the electricity availability? Please rate, on a scale of 1 to 7, with 1 being not at all satisfied, and 7 being Extremely Satisfied.
In what ways do you think this level might increase? Give a brief response.
How satisfied are you with your current availability of food? Please rate, on a scale of 1 to 7, with 1 being not at all satisfied, and 7 being Extremely Satisfied.
In what ways do you think this level might increase? Give a brief response.

How satisfied are you with your current availability of government/municipal health services? Please rate, on a scale of 1 to 7, with 1 being not at all satisfied, and 7 being Extremely Satisfied.
In what ways do you think this level might increase? Give a brief response.

How would you rate your area in terms of safety from crimes? Please rate, on a scale of 1 to 7, with 1 being Perpetual Fear, and 7 being Very Safe.

In the context of support from neighbours (financial/emotional), how would you rate your satisfaction of that experience? Please rate, on a scale of 1 to 7, with 1 being not at all satisfied, and 7 being Extremely Satisfied.
For SRA only: In context of building new relationships, how has your experience been? Give a brief account? Please rate your satisfaction with the experience, on a scale of 1 to 7, with 1 being not at all satisfied, and 7 being Extremely Satisfied.

Open ended Questions:

1. If in Open Slum: Have you ever faced the threat of eviction? If so, how regularly? What does this threat entail? Do you know about SRA housing? If yes, are you thinking of moving into SRA housing? If yes, what is the procedure like, can you please describe in detail?

2. If in SRA: Describe the procedure of moving into SRA housing? Any problems in obtaining the SRA housing? What advantages do you think you gain by moving here? Are there any disadvantages (loss of neighborhood ties, etc.)