International Transport Forum

Perspectives for Integrating Housing Location Considerations and Transport Planning as a Means to Face Social Exclusion in Indian Cities

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Perspectives for integrating housing location considerations and transport planning as a means to face social exclusion in Indian cities

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Acknowledgements

Abstract

This paper highlights the urban development in India and implications for low income households living in informal settlements or slums. The paper is divided into four sections. Section 1 describes urban development pattern in India. Section 2 presents a summary of policies since 1950 which have been implemented to address the housing needs of low income households in cities. Section 3 presents impacts of various housing and resettlement policies in selected cities in India. Section 4 summarizes key insights from self-planned low income settlements in cities-the slums, and expert planned low income settlements as part of resettlement policies.

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Urban development pattern in India

21st century has been termed as the urban century since majority of the world population is living in urban area since 2010. UN report (2014) notes the following three important issues regarding urbanisation:

- Over 90% of urban growth is occurring in the developing world and an estimated 70 million new residents are added to urban areas of developing countries each year. Over the next two decades, the urban population of the world's two poorest regions — South Asia and Sub-Saharan Africa — is expected to double, suggesting that the absolute numbers of informal settlement and slum dwellers in these regions will dramatically grow.

- Informal settlements, slums and other poor residential neighbourhoods are a global urban phenomenon. They exist in urban contexts all over the world, in various forms and typologies, dimensions, locations and by a range of names (squatter settlements, favelas, poblaciones, shacks, barrios bajos, bidonvilles). While urban informality is more present in cities of the global south, housing informality and substandard living conditions can also be found in developed countries.

- Slums affect the prosperity of cities and their sustainability. While on the one hand these areas are acknowledged as providing much-needed mixed land use to cities and as having an active informal economy that, in many countries, provides the majority of jobs, on the other hand, these informal jobs are unskilled, very-low-paid, and insecure livelihood options, part of a 'subsistence economy' that allows inhabitants to survive but not to progress sufficiently to change their living conditions nor to realize the full potential contribution to urban productivity.

In the background of these three important characteristic of current urbanization we explore the urban development and urbanization in India, formal and informal response to deal with these issues and impact of formal policies on the lives of urban poor.

Urbanization and economic growth

Current population of India is 1.21 billion. The population is expected to grow at the rate of 1.8-1.5% per annum by 2030. Therefore, the estimated population of India by 2040 will be in the range of 1.5-1.7 billion. The Indian economy has been growing at a rate of more than 7% for the last four years. However, the urbanization process has been slow in India. The analysis of development dynamics in the 1990s shows that there has been an all-round decline in the growth of employment. Income growth and incidence of poverty have been extremely uneven across states. Thus a slowing down in the rate of urbanization and concentrations of demographic growth in developed states seem to be the logical outcome. The process of urbanization has also become exclusionary in nature, as only a few large cities with a strong economic base are able to raise resources for development, leaving out small and medium towns (Kundu 2006). India is 30% urbanized and is expected to reach 40% by 2040. The current per capita income of USD 1 061 is expected to increase to USD 12 000 in the high growth (9% per annum) scenario and USD 6 000 in the low growth rate (6-7% per annum) scenario.

As per Census 2011, there are 468 cities having population more than 0.1 million. These urban agglomerations and cities are grouped into four categories as small, medium, large and mega cities (Table 1).

Table 1. **Provisional population 2011 by Census of India**

Category	Groups	Population (million)	Total no. of cities	Percentage Population	Total population
1	Small	0.1 – 0.5	372	28%	73 930 414
2	Medium	0.5 – 1.0	43	11%	30 235 593
3		1.0 – 2.0	34	18%	46 686 245
4	Large	2.0 – 4.0	10	9%	24 265 267
5		4.0 – 8.0	4	9%	23 736 923
6	Mega	> 8.0	5	25%	66 037 071
Total			468		264 891 513

Source: Census, 2011

Nearly 60% of urban population lives in cities which have 2 million population or less. Five megacities which have more than 8 million population have twenty five percent of total urban population. Substantial proportion of this population lives in slums. The recent growth of the urban population has aggravated the crunch of urban land, which, coupled with scarcity of affordable housing, has led to proliferation of informal settlements housing the poor that have become a part of the cityscape of Indian cities (Ahluwalia, 2011).

Economic growth

At a likely GDP growth rate of 7.5 to 8 percent per year, real per capita GDP is expected to reach USD 2 700 by 2030, a five-fold increase over the 2005 level. India's population is likely to reach 1.5 billion. This growth will be accompanied by increased urbanization, with well over 550 million (40%) of India's people living in cities two decades from now. This shift towards a more urban economy will expand demand for services like housing, power and transport. The vehicle fleet is expected to increase from a little over 50 million today to about 380 million by 2030 (McKinsey & Company 2009).

India's GDP (nominal) is forecast to increase from USD 1 256 billion in 2010 to USD 6 683 billion in 2030, USD 16 510 billion in 2040 and USD 37 668 billion in 2050. Per capita GDP trend has been forecast in terms of GDP- nominal and per capita in Table 2.

Table 2. **Forecast of GDP trends**

	2010	2020	2030	2040	2050
GDP (nominal) USD billion	1 256	2 848	6 683	16 510	37 668
GDP (per capita)	1 061	2 091	4 360	9 802	20 836

Source: (Wilson and Stupnytska 2007)

It is clear that after twenty five years from now per capita GDP in India will remain low (<USD 1 0000), therefore presence of poor households and informal settlements in urban area will remain a challenge for urban planners.

Informal sector and urbanisation

A large proportion of urban residents in India live in self-planned informal settlements in cities. Informality has been defined in many ways. It is outside what is official or legal or planned. It is certainly not a synonym for criminality which is both outside the law and illegal. Squatter settlements all over the world are called informal settlements because they are not part of the official plan. Nuewirth (2005) describes the squatter as a new migrant to the city who builds a shelter with his own hands on the land that does not belong to him. Nearly one billion people who live in squatter settlements are people who came to the city in search of jobs, needed a place to live that they could afford, and not being able to find it on the private market, built it for themselves on land that wasn't their own. These informal settlements create a huge hidden economy- an unofficial system of squatter landlords and squatter tenants, squatter merchants and squatter consumers, squatter builders and squatter labourers, squatter investors and squatter brokers. The builders of informal housing are the largest builders of housing in the world- and they are creating the cities of tomorrow. The conventional definition of informal-unofficial, illegal or unplanned denies people jobs in their home areas and denies them homes in the areas where they have gone to get jobs.

A significant proportion of urban population in Indian cities remains outside the formal planning process. People living in informal settlements dependent on informal economy for survival in the city are an integral part of Indian cities. Table 3 shows share of slum population in selected cities in India. Generally as the city size increases, share of population living in slums also increases.

Self-planned (informal) settlements in Indian cities

Often in Indian cities squatter settlements develop inside the city close to commercial centres, planned housing developments, and factories. Soon these settlements demand varied services needed by the residents- low cost food, vegetables, tailors, etc. It is a common sight in Indian cities to have street vendors along the roads selling food, toys, flowers and various handicrafts made by family members. Thus the informal sector provides employment opportunity to each and every family member and rewards for their creative endeavours. Growth of formal sector is accompanied with the growth of informal sector, with the latter showing higher growth rates than the formal sector. This is not surprising as the informal sector grows to serve the formal sector as well as to serve the informal sector.

Informal sector develops firstly because of rural-urban migration which is based on a comparison of rural and urban opportunities. Formal sector in urban area requires unskilled or low level of skills provided by the migrant labour. Construction labour, casual labour in factories and commercial establishments depend on migrant labour. Higher income families require domestic help, gardener, carpenter, plumber, electrician etc. for normal functioning.

The patterns of development in Indian mega cities are an amalgam of planned and organic (self-organising) growth. Survival compulsions force poor population to evolve as self-organising systems. These systems rest on the innovative skills of people struggling to survive in a hostile environment and meet their mobility and accessibility needs. Housing, employment and transport strategies adopted by this section of the society are often termed as "informal housing, informal employment and informal transport". Transport solutions evolved by this section of the society do not become part of the official policies. Their existence is mostly viewed as creating problems for the "normal traffic". Formal plans have no place for informal transport. Therefore, most cities face a complex situation where the investments are for formal plans, whereas needs of a significant section of the society is met by informal transport. Is this desirable or sustainable?

Table 3. **Percentage of slum population in selected cities in India**

Million plus cities	Percentage of slum households of total urban households (%)
Greater Mumbai	41.3
Kolkata	29.6
Chennai	28.5
Delhi	14.6
Bengaluru	8.5

Source: Census of India, GoI (2011)

Out of 13.7 million households living in slums in India, as per census 2011, 5.2 million households live in 46 million-plus cities, or, 38% of the total slum population is situated in these million-plus cities. The five metro cities, which attract large number of migrant population have a high share of slum population as shown in Table 3.

Slum free cities

Formation of slums in cities was recognized as a serious concern in India since 1950s. Slum eradication Act 1956 was adopted by the Indian parliament in 1956. The national housing policy of India identified shelter as a basic human need, in 1956. However, there had been no comprehensive plan for housing until 1988 in the country (The first National Housing Scheme was introduced in 1988).

In the First Five Years Plan, with schemes like Housing Scheme for Industrial Workers (1952), Housing for Low Income Group (1954) and Housing Scheme for Plantation Workers (1952) the focus was to provide housing for the LIGs (low-income group). The Second Five Year Plan recognised the needs of slums, their improvement and resettlement. Until the fifth plan period from 1974 to 1979, the emphasis was only on certain weaker sections of the society. From the Sixth plan period onwards, the community development programmes were promoted with active role of the non-profit organizations. After liberalisation of Indian Economy in the nineties, (i.e., from the Eighth plan onwards) the market forces gained more importance and the role of the State was transformed from a provider to that of an enabler (Mukhija, 2004). The National Housing Policy of 1988 was more inclined towards the housing provisions for the higher and the middle-income section. In 1994 this Housing policy was revised with the aim to provide affordable housing for all in the country and strengthen the enabling strategies (Sivam & Karuppannan, 2002). Both public and private sector provide housing in India contributing 16 and 84% respectively. The private sector is active in both the formal and informal categories of housing. The formal housing stocks are unaffordable for the economically weaker section and hence they are provided

with the informal housing stocks in the form of slums. The inability of the Government to see housing as a major economic sector has resulted in the absence of any financial structure until 1970. The Housing and Urban Development Corporation (HUDCO) was created in 1970 for providing financial assistance to the LIGs for augmenting the housing stock. Other important contributors to housing finance are Housing Development and Financial Corporation and Life Insurance Company. In 1988 the National Housing Bank was set up as a subsidiary of the Reserve Bank of India to finance housing schemes (Sivam and Karuppannan, 2002).

Bardhan et al. (2015) have analysed four groups of policies to explain the impact on low income households in Mumbai: i) land and housing, (ii) related to clearance and eviction, (iii) upgradation and redevelopment, and (iv) recent initiatives. The first group consists of the two major policies implemented by the Central government – the Rent Control Act (1947) and the Urban Land Ceiling Act (1976). The second group consists of the Slum Improvement and Clearance Act (1956), The Slum Areas (Improvement, Clearance and Redevelopment) Act (1971) and the Maharashtra Vacant Land (Prohibition of Unauthorized Structure and Summary Eviction) Act (1975), all primarily motivated towards the removal of slums from urban areas. The third group has the policies, which were intended to the development of slum areas, and these are the Slum Upgradation Programme (1985), the Prime Minister's Grant Project (1985), Slum Redevelopment Scheme (1991) and the Slum Rehabilitation Scheme (1995). Finally, the last group has the schemes like the Rajiv Awas Yojna (2013) and Cluster Redevelopment Projects (2014), which are the recent initiatives in housing policies.

The Slum Area Improvement and Clearance Act of 1956 (Government of Maharashtra, 1956) identified the slum areas as places where the buildings are in any respect unfit for human habitation; or are by reasons of dilapidation, overcrowding, faulty arrangement and design of such buildings, narrowness or faulty arrangement of streets, lack of ventilation, light or sanitation facilities, or any combination of these factors, are detrimental to safety, health or morals.

There were provisions for possible improvement and demolition of the buildings as well as that of clearance and redevelopment of the slum areas. The act did not mention about the resettlement plans of the evicted households. This was a major gap in the planning process as without any resettlement plan the easiest option open to the evicted households was to settle in other slum areas or create new slums. Hence, on one hand the Act ensured clearance of urban land; on the other hand it triggered the slum growth further.

The Slum Areas (Improvement, Clearance and Redevelopment) Act, 1971 according to this Act, *"No person shall, on or after the appointment date, occupy any vacant land or continue to in occupation of any vacant land in urban area or erect any shelter or enclose or other structure on such land for the purpose of residence or otherwise without the express permission in writing of the Municipal Commissioner in a corporation area, of the Chief in a Municipal area and elsewhere, of the Collector, or except in accordance with any law for the time being in force in such urban area"* (Government of Maharashtra, 1975). The Act also states that in cases of contravention the Competent Authority "….may by order requires such person to vacate the land ….and to remove all property there from and if such person fails to comply with the order …., he may be summarily evicted from such land …." (Government of Maharashtra, 1975). This Act led to wide scale eviction of slums and squatters, which were identified as being encroachments. The Act does not mention anything about the relocation of the evicted households and hence like the abovementioned Acts, we find a major gap in the planning process too.

Any large-scale clearance and eviction process makes a large section of low income people houseless. These households often take shelter in the other slums or they become pavement dwellers. These processes seriously damage their livelihood as their occupations are largely driven by the selection of their housing location. Either they are located near to their workplaces or the slums themselves get established as an economic centre. In case of eviction, both the occupational structures get heavily

affected. In Mumbai on an average a slum dweller family spends INR 30 000 to 50 000 in constructing their house, due to demolition (Das, 2003). Bardhan et al. (2015) have discussed the verdict given by the Supreme Court of Indian against the eviction of illegal settlements in the Olga Tellis vs. Bombay Municipal Corporation court case in 1985,where the Supreme court identified the relation between habitation and livelihood (Ramanathan, 2005). This can be regarded as the initiation of the in situ slum improvement schemes.

Policies related to upgradation and redevelopment:

The Slum Upgradation Programme (SUP) was introduced in 1985 as part of the Bombay Urban Development Project, in collaboration with the World Bank. It was joined by another similar programme called the Low Income Group Shelter Programme. The basic motive of SUP was to provide renewable lease of land to the slum cooperative societies for a period of 30 years. It would provide loans to the slum dwellers at an interest rate of around 12% and also ensure provision of basic amenities on a cost recovery basis. The slums on the private lands and the central government lands were out of the jurisdiction of this programme. Hence the impact of the programme was not as widespread as expected. The State also issued identity passes to the head of the household to prove their eligibility in receiving the leasehold tenure. The impact of the programme was

In 1985 a Central grant of INR one billion was announced of which INR 600 million was used for the upgradation and improvement of Dharavi (Barke, O' Hare, & Abbott, 1998). The funds were used to provide housing for the slum dwellers and also to improve conditions of the existing infrastructure. It recommended 30 000 to 35 000 families to be accommodated within Dharavi and 20 000 families to be relocated outside Dharavi (Mukhija, 2001). Transit camps were set up to temporarily relocate the households during the construction process. There were problems like shortage of transit settlements, delays in construction, lack of awareness among the beneficiaries, higher prices of the newly created housing stocks and manipulation of the beneficiary list by the outsiders. As such the housing stocks remained limited and the idea of affordable housing was not successful.

The liberalisation of the Indian market in 1991 invited large scale foreign investment into the housing sector as well. The ruling party introduced a new scheme called the Slum Redevelopment project, inviting the private investors to take up the job of slum redevelopment. As an incentive the FSI of the slum areas were increased up to 2.5 from 1.33, which encouraged the construction of high rise buildings. As per the scheme the private developers should carry out in situ redevelopment of the notified slum area by rehousing the slum dwellers into tenements measuring 180 sq. feet (16.72 m²) and the rest of the place was available for them to build and sell in open market. This is how the builders were compensated of their cost of construction and resettlement. However, the houses for the slum dwellers were not free, and they had to pay a certain part of the construction cost. Also there was an added criterion of eligibility, where the slum dweller had to establish his duration of stay in the existing from before that of 1985. This cut-off date made a large section of the slum population ineligible for getting rehousing facility and there was no alternative measures recommended for the ineligible section. Also the scheme failed to attract the interest of the private developers and all in all, the scheme was criticized for inefficiency (Risbud, 2003). The success of the scheme depended on high property rates, to benefit large developers and builders who thus became instrumental in evacuating slums from prime lands of the city (Banerjee Guha, 2002).

A modified version of the Slum Redevelopment Scheme (SRS) was brought up by the newly elected party in 1995. Following the recommendations of the Afzalpurkar Committee (1995), a separate body called Slum Rehabilitation Authority was set up to exclusively look into the matters related to slum resettlement. Thereby three types of rehabilitations were recommended, viz. In Situ, Project Affected People (PAP) and Permanent Transit Tenement (PTT). The year of eligibility criterion was raised to 1995 and recently to 2000, and the scheme also includes the pavement dwellers. The size of the

tenements has been increased to 225 sq. feet (20.9 m²) to recently to 269 sq. feet (24.99 m²). The tenements were made totally free for the slum dwellers. The private developers were provided incentives in the form of free sale component of 7.5 sq. feet for every 10 sq. feet free rehabilitation construction. The sale ratio varied from 1:0.75 in the inner city to 1:1 in the suburban areas. Since the FSI of the resettlement areas was fixed at 2.5, the additional area was made available in the form of generating Transferable Development Rights.

The Slum rehabilitation Scheme is hence driven by the interest of the private developer and the strength of the real estate forces. The scheme of rehabilitation is more inclined towards the interests of the wealthy developers rather than the actual slum population. According to Patel (1996), it is mixture of "admirable and dubious". The strong market forces favour active rehabilitation and vice versa. The impact also varies with the variation in the local property prices. The developers will be more interested in areas where the sale component can fetch higher prices. Though the SRS scheme seems to be very lucrative, the true statistics fail to establish it as a real success (Das, 2003 and Nijman, 2008). In April 2014, the total number of completed units was 157 402 and 86 069 units are under construction (Praja, 2014).

Similar policies have been followed in Delhi and Chennai and other major cities.

Bhan and Shivanand (2013) have analysed displacements in Delhi from 1990-2007. It was noted in 2000, 14.8% of the population of Delhi lived in Jhuggi Jhompri (JJ) clusters, and 12.7% lived in resettlement colonies where they had been placed post-eviction with some measure of security of tenure (Government of Delhi 2006). It is thus within negotiating and delaying, if not preventing, eviction and subsequently fighting to access resettlement that the poor have historically claimed shelter in the city. It is a process of settlement that is never complete, one in which the poor are constantly (un)settled, regardless of how many decades they may have lived in the city, and one that, in turn, constantly produces and maintains the contemporary Indian city itself as unsettled. Analyses by Bhan and Shivanand (2013) and Dupont (2008), among others, suggest at least 218 evictions between 1990 and 2007 in the capital, covering at least 60 000 households. Recent documentation of heightened evictions for the Commonwealth Games in 2010 indicates the continuation and deepening of this trend post-2007 (HLRN 2010). This documentation of widespread evictions is now affirmed by the Census 2011, which states in that "a major reason for the fall in the decadal growth rate (in Delhi) is the wide-ranging removal of slum JJ clusters from various parts of the city". Preliminary data further suggest "a significant fall in the slum population despite broadening the definition of slums for the 2011 Census". Particular districts bear the brunt of these evictions – "It has been established that removal of slum clusters within the NDMC (New Delhi Municipal Council) Area is the primary reason for a 25% fall in population in the New Delhi district vis-à-vis 2001" (Government of India 2012: 44). The districts of New Delhi and Central Delhi recorded negative decadal growth rates while North West Delhi recorded the second highest decadal growth rate, primarily attributed to the building of resettlement colonies such as Bawana, Bhalsawa, and Savda-Ghevra.

It is clear from the above discussion that slum problem has been understood largely as lack of affordable housing. While decent housing continues to remain unaffordable to a large proportion of slum dwellers in most Indian cities, evictions continue and resettlement strategies have had major adverse effect on livelihoods of millions of households in Indian cities.

The new central government came to power in 2014 and proposed a major shift from the earlier policies and announced "The smart city initiatives". Ministry of Urban Development, Government of India Website states: The purpose of the Smart Cities Mission is to drive economic growth and improve the quality of life of people by enabling local area development and harnessing technology, especially technology that leads to Smart outcomes. Area based development will transform existing areas (retrofit and redevelop), including slums, into better planned ones, thereby improving liveability of the whole

City. New areas (greenfield) will be developed around cities in order to accommodate the expanding population in urban areas. Application of Smart Solutions will enable cities to use technology, information and data to improve infrastructure and services. Comprehensive development in this way will improve quality of life, create employment and enhance incomes for all, especially the poor and the disadvantaged, leading to inclusive cities. There is no specific mention of policies required to address the problems of slums or informal settlements.

The first twenty cities have been selected to receive funding from the central government in February 2016. The emphasis is on application of IT and smart solutions. There is no mention of the existence of informal settlements.

Impact of eviction and resettlement policies

This section presents impact of eviction and resettlement policies on low income household in Delhi, and Chennai. Similar impacts are expected in other Indian cities.

Urban planning policies and relocation of poor households in Delhi

Delhi has witnessed large-scale evictions and resettlement since 1998. Before this large scale evictions were carried out in 1977 during the imposition of emergency rule in India. Large numbers of low-income households have been relocated for development projects like commercial complexes, flyovers, recreational parks, and wide roads to improve the landscape of the city. Figure 1 shows the trends of eviction of low-income settlements from the central areas of the city and relocation to the peripheral areas. Peripheral development and relocation of urban squatters has meant an increase of the spatial segregation of social groups. This has also resulted in poor access to income-generating activities.

Figure 1. **Location of low income settlements (green dots: original location, red dots: relocation by experts)**
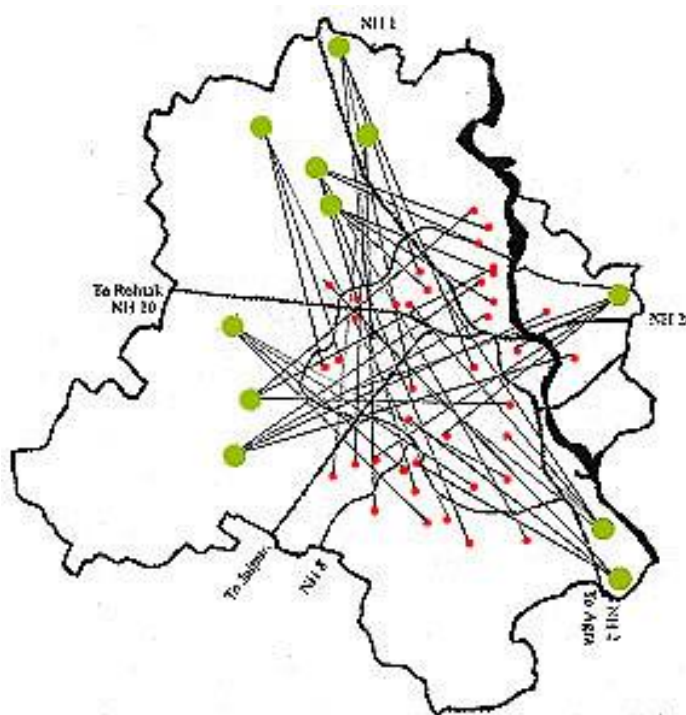
Source: Hazard Centre, 2001

Table 4 shows number of households who have been shifted to resettlement colonies. More than 40 000 households have been shifted from the central city location to the periphery of the city. This has resulted in an increase in travel distance to work as well as to the public transport stop.

Table 4. **Number of households moved between 1997-2003**

Site number	No. of households	Distance from original site
1	8 000	8 km
2	4 000	7 km
3	5 000	18 km
4	3 000	10 km
5	2 300	12 km
6	50	5 km
7	500	18 km
8	5 500	23 km
9	4 500	20 km
10	1 000	15 km
11	4 000	18 km

Site number	No. of households	Distance from original site
12	50	8 km
13	65	35 km
14	20	40 km
15	1 200	25 km

Source: Anand, 2007

Arora and Tiwari (2007) studied 2 000 households in Delhi to estimate the impact of relocation due to metro construction in Delhi. The study documented accessibility and mobility conditions of households residing in the city in slums before the construction of metro, and after they were relocated to new locations planned by the city authorities at the outskirts.

Accessibility

Accessibility is a description of the proximity to destinations of choice and the facilitation offered by the public transport systems to reach them (Anand, 2007).

The indicators of accessibility are defined as:

- The Public Transport Accessibility (APT) measures distance cost and time to bus stop and metro stops.

- The Spatio-Travel Accessibility (AST) has two components and is derived from household surveys (both in self-planned settlements in the vicinity of the metro line, and households relocated to expert planned settlements):

    - Spatial Accessibility (AS) describes the land-use components of accessibility.

    - Travel Accessibility (AT) describes the accessibility of land use and transport systems for the households surveyed.

Mobility

Mobility is both the ability to travel to destinations of choice and the amount of movement necessary to do so. By definition, the household's ability to travel is seen as positive mobility from the socio-economic perspective because it indicates that people are traveling for employment, education and other purposes, thus enabling value addition to the households. On the other hand, the amount of movement is seen as negative mobility from the socio-economic perspective because it uses resources of the household, like time and money, which could have been better utilized to upgrade the quality of life of the household.

Table 5. **Percentage change in AST indicators for households relocated**

Change category	$D_{education}$ (diff)	D_{health} (diff)	$D_{services}$ (diff)	$D_{busstop}$ (diff)	S_{bus} (diff)
Total decrease	40.8%	33.8%	36.3%	13.9%	1.5%
No change	7.5%	3.5%	11.9%	14.4%	0.0%
Total Increase	51.7%	62.7%	51.7%	71.6%	98.5%

Table 5 shows that, for the relocated households, the value of all the indicators have changed. The distance to schools ($D_{education}$) has increased for 52% of the households but decreased for 41% of the households. Similarly, the distance to health services (D_{health}) has increased for 63% of the households and decreased for 34% of the households. Also, the distance to urban services ($D_{services}$) has increased for 52% of the households and decreased for 36% of the households. The highest impact is seen in the indicators measuring access to bus system – the distance to the bus stop ($D_{busstops}$) has increased for 72% of the households and the time gap between successive buses (S_{bus}) has increased by more than 100% for 98% of the households. Figure 2 and 3 show change in distance and travel time before and after relocation.

Figure 2. **Change in travel distance before and after relocation**
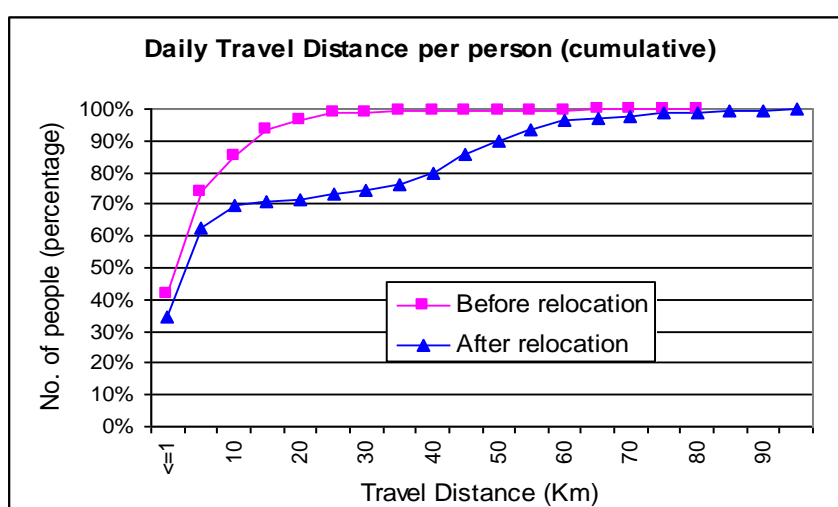
Figure 3. **Change in travel time before and after relocation**
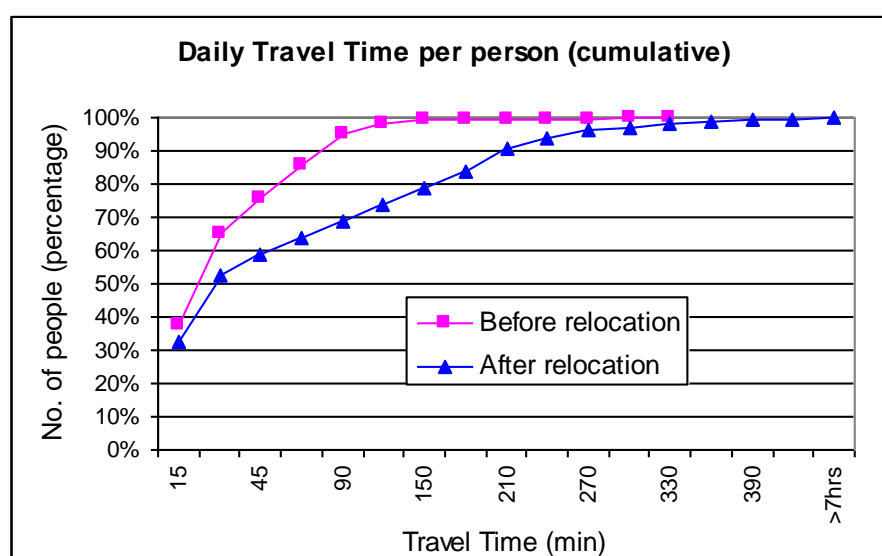
Table 6 shows that, for the households living in settlements which have not been relocated, there is some change in the indicators of per capita trip rate (PCTR) for work (there is no change for 78% of the households and it increases for 13% of the households) and other purposes (there is no change for 82% of the households and it decreases for 14%), but little change in the PCTR for education (there is no change for 91% of the household. The share of NMVs in the modes used for travel in households does not change for 87% of the households, increases for 7% and decreases for 5% of the households.

Table 6. **Percentage change in mobility indicators for households in the vicinity of the metro line**

Change category	PCTR$_{work}$ (diff)	PCTR$_{edu}$(diff)	PCTR$_{others}$(diff)	M$_{nmv}$/M$_{all}$(diff)
Total decrease	9.4%	3.9%	13.8%	5.4%
No change	77.8%	91.1%	81.8%	87.2%
Total increase	12.8%	4.9%	4.4%	7.4%

Source: Anand, 2007

Table 7 shows minimum change in the mobility indicators regarding travel for education (distance, time, cost). The distance to work, the time to work and the cost has not changed for 73%, 72% and 91% of households respectively and has increased for 17%, 17% and 5% of households respectively. For trips made for other purposes, the distance, time and cost indicators have not changed for 72%, 72% and 93% households respectively, and have decreased for 15%, 16% and 4% households respectively.

Table 7. **Percentage change in MP indicators for households in the vicinity of the metro line**

Change category	D$_{work}$ (diff)	D$_{education}$ (diff)	D$_{others}$ (diff)	T$_{work}$ (diff)	T$_{education}$ (diff)	T$_{others}$ (diff)	C$_{work}$ (diff)	C$_{education}$ (diff)	C$_{others}$ (diff)
Total decrease	10.3%	3.9%	15.3%	13.8%	4.4%	16.3%	3.4%	0.0%	4.4%
No change	72.91%	90.64%	72.41%	69.46%	88.67%	71.92%	91.13%	100.0%	93.60%
Total increase	16.7%	5.4%	12.3%	16.7%	6.9%	11.8%	5.4%	0.0%	2.0%

Source: Anand, 2007

Tables 8 and 9 show that, for the households relocated as per the land use policy, the value of all the mobility indicators have changed for the majority of the households. Table 8 indicates that for 49% households, the PCTR for work has increased and for 30% of the households it has decreased. For 71% of households, the PCTR for education does not change – it increases for 19% and decreases for 10% of the households. The PCTR for other purpose has increased for 35% of the households and decreased for the same percent of households. The share of NMVs in the mode used has decreased for 59% of the households.

Table 8. **Percentage change in MHH indicators for households relocated to expert planned settlements**

Change category	PCTR$_{work}$ (diff)	PCTR$_{edu}$(diff)	PCTR$_{others}$(diff)	M$_{nmv}$/M$_{all}$(diff)
Total decrease	29.9%	10.4%	35.3%	58.7%
No change	21.39%	70.65%	29.35%	21.89%
Total increase	48.8%	18.9%	35.3%	19.4%

Source: Anand, 2007

Table 9. **Percentage change in MP indicators for households relocated to expert planned settlements**

Change category	D_{work} (diff)	$D_{education}$ (diff)	D_{others} (diff)	T_{work} (diff)	$T_{education}$ (diff)	T_{others} (diff)	C_{work} (diff)	$C_{education}$ (diff)	C_{others} (diff)
Total decrease	14.9%	22.9%	58.2%	14.4%	21.9%	52.2%	10.4%	2.5%	12.4%
No change	2.49%	43.28%	8.96%	3.48%	42.79%	7.96%	28.36%	93.53%	65.17%
Total Increase	82.6%	33.8%	32.8%	82.1%	35.3%	39.8%	61.2%	4.0%	22.4%

Source: Anand, 2007

Table 9 shows that the mobility indicators for travel to work – distance, time and cost – have increased for 83%, 82% and 61% of the households respectively. The distance, time and cost for education have not changed for 43%, 43% and 94% of the households respectively and have increased for 34%, 35% and 4% of households respectively. Regarding travel for other purposes, there is a decrease of distance and time for 58% and 52% households respectively but no change in cost for 65% of households.

The results of the study show that for the poor households, which are not relocated to new areas, there is no significant impact on the indicator of mobility. The construction of metro line does not change their mobility patterns. However, since the bus routes and location of bus stops have been changed, these households face reduced access to transport services. With regard to the accessibility of the households, while the land use accessibility remains unchanged, the transport accessibility has changed as distance to the bus stops has increased for 19% of the households and bus services have become non-existent for 33% of the households.

On the other hand, for poor households relocated to the new areas, there has been a significant impact on the indicators of accessibility and mobility. The land use accessibility has deteriorated as distance to schools, health services and other urban services have increased for 52%, 63% and 52% of the households respectively. The transport accessibility has deteriorated even more as distance to bus stop has increased for 72% of the households and the bus frequency has decreased, on an average, from 5 minutes to 63 minutes (almost 13 times). The mobility of the households has increased significantly. The PCTR for work has increased for 49% of the households and decreased for 30%, implying change in the number of trips made for work in the households. The share of NMVs amongst the mode used has decreased for 59% of the households. The mobility indicators for travel to work – distance, time and cost – have increased for 83%, 82% and 61% of the households respectively.

Sarma (2015) studied travel patterns of people living in informal settlements in Delhi in 2012. Travel diaries of 1 700 individuals revealed the importance of quick access to employment for the inhabitants of the informal settlements. This also explains why the informal settlements brave illegality in the face of hostile authorities to stay close to their employment opportunities and raises questions against rehabilitation of slums in remote corners of city with reduced access to employment and amenities (Anand and Tiwari, 2007). While planning rehabilitation of informal settlements, the authorities must consider the proximity to their employment lest their very employment opportunities are adversely affected. The study also found that travel cost places a burden on the travel options of the residents of informal settlements, which accounts for the heavy dependence on walking and non-motorized transport. The usage of even public transport has been very limited as it places a burden on their finances. This shows that facilities like metro rail system, which are more expensive than the city bus, have questionable utility in providing accessibility for a large section of population that are poor.

The study also found that in settlements that came up close to the resettlement colonies significantly reduce education and work trips. These are the settlements formed by the former dwellers of relocated informal settlements but were deprived of the government housing. After the forced evictions, generally

these settlers try to find a place close to their community who are rehabilitated in to government built resettlement colonies far from their employment. We expect that those living in resettlement colonies also are likely to have the same socioeconomic characteristics as these people and suffer similar disadvantages. The survey showed that most of the travel by the inhabitants of informal settlement is performed by walking or bicycle, the male employees have a higher probability of performing work tours than females. Most of the tours made by the women employees have been found to be pedestrian tours and are short distance tours.

Table 10. **Travel characteristic s of residents of informal settlements**

Type of employment	Average PT distance (Km)	Average PT travel time (Minute)	Average PT travel cost (INR)
Formal	14.4	70	28.3
Informal	9.7	62	12.3
Student	3.3	29	1.7
Total	7.1	47	8.9

Source: Sarma, 2015

Table 11. **Travel distance of residents of informal settlements**

Type of employment	Percentage of employees by tour distance (km)					
	0	0.4-2.0	2.1-5.0	5.1-10	>10	Total
Formal	1.0%	2.1%	1.9%	3.1%	3.9%	12.0%
Informal	5.7%	7.6%	7.7%	8.1%	9.0%	38.2%
Student	14.8%	23.0%	9.4%	1.0%	1.6%	49.8%
Total	21.6%	32.8%	19.0%	12.1%	14.5%	100%

Source: Sarma, 2015

Most of the resettlement colonies have been at the periphery of the city. Bhan and Shivanand (2013) note:

"This peripheralisation has increased post-1990s, with resettlement colonies literally at the edge of the borders of Delhi. This is seen particularly in the case of Narela and Holambi Kalan/Khurd, where more than 25 000 families from 88 evictions were offered resettlement plots. These two resettlement colonies are at the farthest tip of the northern edge of Delhi. Similarly, the newest resettlement colony of Savda Ghevra, where more than 9 000 families have been offered plots since 2006, lies at the western edge of the border of Delhi. None of the resettlement colonies since the mid-1960s fall within the NDMC and Cantonment areas even though at least 48 evictions have taken place within these boundaries, indicating the premium that space holds in these areas. The increasingly peripheral location of resettlement colonies, along with the continuing practice of prioritising resettlement rather than in situ upgradation, is thus creating precisely the spatial segregation that the Master Plan Delhi, 1962) sought to avoid".

Bhan and Shivanand (2013) also found that the four primary uses of the land that has been made available after the eviction of slum dwellers are vacant land, road and related infrastructure, parks and playgrounds, and government infrastructure (Figure 1). Of former basti land, 17% has been used for road

and related infrastructure, while 15% has parks and playgrounds on them. The rest have commercial/ office space, have been reoccupied by JJ clusters, are being used for commercial purposes, or have metro infrastructure, landfills, concrete residences, nurseries, or drain-related infrastructure.

Importantly, 25% of the recovered land remains vacant and unused. In the vacant land category, there are at least 51 evicted sites – accounting for the displacement of a minimum of 21 551 families – that have remained fully or partially vacant between four and 21 years. Of these, 19 sites have remained partially/fully vacant for at least 10 years. The presence of so many vacant land parcels that were used productively by the poor for housing and shelter before their "reclamation" is not just an indicator of the futility of so much of the displacement that has taken place in Delhi, but also makes a case for re-hauling the state's policy towards the land it owns and redefining the basis of the priorities on use of public land. Instead of displacing the poor to reclaim land that is not needed for any other immediate purpose, the state could have chosen to invest in upgrading the land.

Chennai evictions and resettlement:

Large scale resettlements have taken place in Chennai between 2004 and 2014. Alberts et al.(2015) note that although the policy was designed to improve housing conditions for slum inhabitants, it also meant that residents became isolated from the city in terms of geographic distance, and the social relations on which they had depended for work and income, consumption, social, and religious activities. Alberts et al.(2015) paper uses a relational understanding of resettlement and exclusion, by examining how women's spatial practices are embedded in their livelihood strategies, their decisions about efforts and cost versus access to resources, and the extent to which they are able to counter socio-economic and spatial exclusion. Studies on the effects of resettlements on livelihoods in the Chennai area emphasize the disruption residents face in the new locations because of the distances to former social and economic networks (Arabindoo, 2012; Van Eerd, 2008). They highlight the resident's agency and collective mobilization to organize basic amenities and facilities in the new areas (Van Eerd, 2008). They also highlight the lack of facilities linking resettlement areas to the rest of the city, especially in the first period. Choices made in seeking employment and location of employment are influenced by a wide range of factors, as shown by the study in the resettlement area Kanagi Nagar south of Chennai 10 years after its establishment (Coelho et al., 2013). These include household situations and combined responsibilities within and outside the household (especially for women). Women travel up to 25 km., and the study by Alberts et al (2015) finds that both work and social relations are maintained across these distances, as women frequent places in the city for work, family visits, education, visiting temples and churches. This implies that women have maintained or re-established their relations with the city. This result places the women from the fringe firmly back into the city. However, urban accessibility is strongly linked to transportation accessibility. The majority of women stay in and around Semmencherry, within a radius of 5 km. Timings of transportation, social safety, and health issues limit women's possibilities to utilize transportation in physical terms. Finances limit their possibilities further in accessing transportation. This implies that their overall time–space access is limited (Kwan, 2002). These findings are in conformity with several dimensions of Fereirra's conceptualization of "access" (Fereirra and Batey, 2007).With better transportation links in Semmencherry, women have more opportunities for extending their space-time paths. However, two groups of women with very different situations are found to do so. The women from extended families can use their access to expand their relations with the city, for both employment as well as for accessing other facilities and resources. Women from single-person households have no choice but to work and access work elsewhere in the city, juggling livelihoods demands. They find themselves overstretched, which generates health and safety issues. Cultural norms play an important part in limiting the mobility of the large proportion of women remaining within the immediate range of Semmencherry.

Lucas (2012) shows that transport-related exclusion is a combination of socio-economic barriers preventing marginalized groups from using public transportation and the absence of affordable, safe, and accessible public transportation. Alberts et al (2015) reaffirm that the removal of obstacles to travel to the city centre combined with sufficient social-economic resources are prerequisites for inclusion. Alberts et al (2015) suggest that the choice to travel is more complex and involves weighing different factors, such as household needs, opportunities, and preferences, against the background of the households' composition. The choice not to travel is not always made because traveling is impossible; women may choose not to travel because they invest their time and resources elsewhere.

Planning for the poor and failure of planning

Many issues condition planning's ability and willingness to support the urban poor in the Global South. Roy (2009) discusses several possible failings in the context of India. Amongst these are inadequate planning practice, failure to accurately forecast changing need and planning policy increasingly underpinned by the imposition of values based on neoliberal, capitalist-driven rationality, the latter noted repeatedly by others (Du Plessis, 2005; Fernandes, 2004; Roy, 2009). Both Shatkin (2004) and Fernandes (2004) highlight the political amnesia which seeks to disregard the existence of poverty through an apparent abandonment of place-based poverty alleviation policies. That planning does not simply forget the poor but, through dominant planning rationales, actually exacerbates their difficulties. These rationales are manifesting in the built fabric of cities through spatial policies which prioritise the needs and desires of the affluent (Fernandes, 2004). These policies have become the guiding norms of planning. Their use as standard processes and planning tools, without regard for their value or impact, allows little room for accommodating Watson's (2003) 'conflicting rationales' existing between different stakeholders in the urban arena.

Low-income settlements whether self-planned or by the experts as part of the resettlement process have similarities in some aspects and differences in many aspects. While density patterns and usage of space is somewhat similar, one of the most important difference is location of the settlement with respect to the city. The self-planned low-income settlements are mostly located near the city centre, commercial or industrial hub or formal planned residential areas. Figure 4 shows a Google view of a low-income settlement in south Delhi. The land use around the low-income settlement provides both formal and informal employment opportunities. Most of the work places can be accessed by walking or bicycles resulting in least amount of travel expenditures. Studies conducted by Sarma (2015) show almost 80% trips are walking trips in these settlements. The length of these trips is also less than a kilometre. The travel pattern of residents of low-income settlements that are at the periphery in the resettled colonies is different. Number of walking trips reduce and distance to work increases. Location of resettlement colonies have been decided primarily on the basis of inexpensive land. Proximity to employment opportunities is not the prime concern.

Figure 4. **Contiguous development of low-density, high income and high-density, low-income colonies (enclosed within red boundary) in southern part of Delhi**

Source: Sarma, 2015

The literature on transport-related exclusion provides insights into the relations between (lack of) transportation opportunities, spatial practices, and livelihoods. Its thrust is that residential locations removed from the city centre and its job opportunities result in isolation and poverty due to inaccessibility or high costs of transportation (Anand and Tiwari, 2006; Lucas, 2012; Olvera et al., 2008; Srinivasan et al., 2007; Srinivasan and Rogers, 2005; Ureta, 2008; Venter et al., 2007). Transport-related exclusion occurs when social and economic disadvantages overlap with insufficient access to transportation (Lucas, 2012). Several forms of exclusion are distinguished: physical and geographical exclusion, exclusion from facilities, economic exclusion, time-based exclusion, fear-based exclusion, and spatial exclusion (Church et al., 2000, Lucas, 2012). Especially women face limitations in their spatial practices and access to transportation caused by the combination of productive and reproductive tasks, geographic distances, cultural norms concerning the use of certain modes of transportation, safety concerns, costs, and gendered relations within the household (Anand and Tiwari, 2006; Astrop et al., 1996; Kwan, 2002; Lucas, 2011; Venter et al., 2007).

We summarise these findings with respect to housing location, land use patterns and transport options for inclusive urbanisation: housing of low-income households and presence of slums or informal settlements in cities has been one of the major concerns of urban planners and policy makers since 1950s. The policies have ranged from forced evictions to in situ upgradation as the preferred option. Most policies have focused the need for affordable decent housing and ownership of land and access to basic amenities. Housing banks have been set up for easy financing and better rehabilitation policies. However, these policies have missed the strong link between housing location-access to livelihood-affordable transportation options and activity patterns of low-income households. As shown by Sarma et al (2014) employment pattern of low income households have to be understood differently. The destinations change as per the requirement of the job. Very often the destinations are the formal planned residential locations. Proximity to employment (formal and informal) is the most important factor influencing the choice of slum location. Policies focusing on land ownership and affordable housing have missed the link between location and livelihood.

Access to public transport systems like metro or bus system seems to be a weak option for addressing the exclusion created by land use policies. A subsidized public transport does not address the time poverty faced by many households and the flexibility required for multitasking, combining

household chores with employment. Access to employment and other activities have to be ensured by improving pedestrian and bicycle facilities.

It is thus recommended that the new planning guidelines are framed for resettlement programs by learning from the self-planned settlements (slums) in order that the needs and requirements of the people are taken into account. Proximity to formal employment reduces dependency on motorized modes and reduces exclusion. This is more important for women who are involved in multitasking. More efforts are required to understand the factors which have resulted in failure of in situ development of slums or informal settlements.

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