Chapter 2

HOUSING QUALITY

The requirement of housing as a basic need ensures that almost every household manages to procure some form of shelter however minimal. As per the Census of India 1991, only 0.5 percent of the city population is houseless. The mere acquisition of a house, however, does not presuppose a satisfactory living. The latter is contingent upon the quality of the former.

This chapter analyses the quality of housing in all the 300 cities of the country. The discussion is based on data provided by the Census of India, 1991. One may however, dwell on the concept of housing quality, before embarking upon the main exercise.

The quality of housing is to be ascertained from its efficacy in providing desired living conditions. This of course, is a function of the development level and cultural context of any area. At the primeval stage one looked towards housing as a means of security and shelter. It had to provide protection against the onslaught of both natural and human vagaries. Housing so was geared towards sturdiness. Agricultural and pastoral societies built houses that met the needs of both humans and livestock. In the industrial societies a habitat congenial to private and healthy lifestyle became a necessity. In more modern societies ‘intelligent homes’ programmed to be technology friendly had to be raised.

In the context of an ‘approaching modernity’ society like India, housing may be expected to ensure ‘all weather’ shelter, a hygienic environment and some modicum
of comfort. One may look for indicators to measure all the above. The incidence of *kutcha*/*pucca* houses is an indicator of the tenacity of housing when exposed to the hazards of weather. Basic amenities such as safe drinking water are indicators of the environmental quality. The availability of electricity serves to make life both comfortable and productive. Housing quality in Indian cities may, thus be gauged from data on these parameters. Census of India lends the necessary support by way of providing the requisite data at the household level.

**Kutcha Houses**

All such houses, in which the roof and walls are made from grass or leaves or reeds or bamboo or thatch or mud or un-burnt bricks or wood, or a mixture of any of these, are classified as *kutcha* by the National Buildings Organisation. Census of India follows this very definition. *Kutcha* houses are mostly fragile and susceptible to the elements of weather. In urban context, these are associated with temporary living arrangements, often manifest in slums and squatter settlements. Above all such houses are difficult to service. The incidence of *kutcha* houses represents less than satisfactory housing conditions, in a city, where a *pucca* house is generally a norm in the Indian context.

The proportion of households residing in *kutcha* houses in Indian cities varies from a high of 52% in Purnia in Bihar to a low of 0.1% in Patan in Gujarat. Clearly the range is wide. Average is 9.5 percent. The maximum and minimum are also indicative of regional patterns (Map 4). *Kutcha* houses predominate in cities located in the lower Ganga plain, in northeast India and along the eastern coast. Their proportion is negligible in the west, northwest and north.
Kutcha houses abound in regions that are economically underdeveloped, have locally available building materials that have been classified as kutcha and are free from extremes of climatic conditions. There is abundance of clayey soil in the lower Ganga plain and in the coastal deltas, and bamboo, grass and wood abound in northeast India. The moderate climes of the coastal regions make pucca houses an option, if unaffordable. By comparison, northwestern, north and central India are exposed to extremes of climatic conditions in the form of hot summers and cold winters, making pucca houses a basic necessity.

City size and the incidence of kutcha houses, display a rather complex relationship. Cities of all sizes may have either high or low proportions of kutcha houses. The panorama acquires greater lucidity when the cities are viewed within the context of the regions of their location. In regions of high incidence of kutcha houses, in general, the larger cities have relatively lower proportions of the same. This reflects a wide disparity in economic level of the cities and their hinterlands. On the other hand in regions of low incidence of kutcha houses (western and central India) the larger cities (million plus) have higher proportions of kutcha houses (Nagpur, Surat, Bhopal, Indore, Lucknow, Patna). Massive inflow of the rural poor to these cities is the underlying factor. Slum localities that normally have a high proportion of kutcha houses emerge in large numbers in the process.

Another related fact worthy of note may be mentioned. The southern states of Andhra Pradesh, Tamil Nadu and Kerala abound in urban agglomerations, where considerable proportion of population resides in the outgrowths. These outgrowths have slum like conditions, with several households living in kutcha houses.
Of the kutcha houses in Indian cities, nearly one-third are unserviceable. All *kutcha* houses barring whose walls are made of mud or unburnt bricks, are classified as unserviceable. These are rated as the more fragile among the *kutcha* houses and are deemed unfit for provision of electricity and water and sanitation facilities.

The proportion of unserviceable kutcha houses in cities increases as one moves eastwards and southeastwards on a map of India. Such a spatial pattern closely resembles that of the proportion of *kutcha* houses in cities. The situation along the Malabar and Coromandel coasts emerges as most worrisome. Several of these are fishermen’s localities with predominance of low castes in population.

For urban areas as a whole, the proportion of households residing in unserviceable kutcha houses is relatively high in are Bihar, Assam, Meghalya, Tripura, Manipur, Mizoram and Arunachal Pradesh in eastern and northeast India, Gujarat and Maharashtra in western India and Kerala and Karnataka in southern India. In the Northeast, the spread of such houses is all-pervasive, in conformity with the regional setting of tribal population. In Bihar the proportion is higher in smaller cities several of which are simply like overgrown villages, in terms of both economic base and population numbers and in Maharashtra, Gujarat, Madhya Pradesh and Rajasthan in bigger cities swamped in parts by slums. In Kerala such houses abound mainly in the small and medium cities marked by a large number of outgrowths. While high proportions of unserviceable kutcha houses mark most of the million cities, this is only partially true of Mumbai, Chennai and Delhi where many of the slum localities have been considerably improved.

The more fragile among the kutcha houses, also referred to as unserviceable kutcha houses, serve as a stronger indicator of housing quality These represent the flimsiness
of structure, incidence of poverty and proliferation of slums. Contrary to popular perception, some of the megacities have relatively lower proportion of unserviceable *kutcha* houses for reasons of both public and individual effort.

In the light of the vulnerability of city populations to intermittent and unforeseen disasters, there is a need for greater deliberation on the concept of *kutcha* and *pucca*. One may dwell on how susceptible *kutcha* houses are in reality and what is the extent of invulnerability of so called *pucca* houses. Moreover the worth of a building material should be gleaned from its degree of accessibility/availability and its financial viability. Environmentally friendly, ecologically sound and financially viable materials, either *kutcha* or *pucca*, are the need of the hour.

**Safe Drinking Water**

Information on the availability of drinking water is collected along two parameters: firstly, the nature of source and secondly, the location of source. The main source of drinking water could be any one: tap, well, hand pump/ tube well, canal/ river, tank/ pond and any other. These are divided further into safe and unsafe sources. Whereas, tap water and hand pump/ tube well are considered sources of safe or potable water, the rest are classified as unsafe for human consumption. Location of the water source could be within the premises or at some distance outside. A location outside the premises hints at a scenario where a number of households may be sharing a single source of water (possibly a tap or hand pump in an urban scenario). Such a situation is more likely in the city slums. The actual availability of water here may be limited and irregular.
Data at the city level exists for availability of safe drinking water. Information on its availability within or outside the premises is lacking. More than four-fifths of the households in urban India, in 1991, had access to safe drinking water. These obtained treated water through either pipeline or depended on sub-surface covered water drawn through handpumps. The percentage of such households ranged from 10 percent in Dabgram (W Bengal) to 98 percent in Ratlam (Madhya Pradesh). Broadly speaking, cities located in the northern plains and peninsular deltas are better placed in this respect (Map 8). The relative ease with which one can bore a hand pump/ tube well in the soft rock structure no doubt has a role to play. This very fact also makes it easier for municipal authorities to draw and provide piped water supply, in case river as the source of water is not adequate. On the other hand the cities of northeast India, those in the coastal regions barring those situated in the delta and others in the Plateau region score low on this count.

A broad uniform pattern of access to safe drinking water within the state boundaries is not uncommon. This highlights the possible efficiency or inefficiency of the concerned state. Punjab emerges as the best served and Kerala the least on this parameter. Intra state disparities do exist, especially in the states of Bihar (between the north and south) and Madhya Pradesh (between the east and west). These disparities can be referred to the administrative boundaries before reorganisation of the states.

Kerala deserves a special explanation. Here the traditional sunk wells in individual houses continue to be in use. Open wells are not considered safe as a source of drinking water. In addition, most of the cities in the state are urban agglomerations. Here the outgrowths contribute a large chunk of the city population, sometimes as high as 50% or more. These tend to have rural attributes.
INDIAN CITIES
Households Having Access to Safe Drinking Water
1991

Population

- 5,000,000 and above
- 1,000,000 – 4,999,999
- 500,000 – 999,999
- 100,000 - 499,999

Percentage in total

- Highest (Gandhinagar: 98.7)
- Average: 81.6
- Lowest (Dabgram: 10)

Data Source: Census of India

Map: 8

Only metropolitan cities have been named.
Larger cities are better served than the smaller. Million cities score the highest. This points to the role that the municipal bodies play in provision of water supply. This also reflects the greater ability of the larger cities to afford infrastructure necessary for supply of water. Even the slums here get better service through various water supply schemes.

Access to safe drinking water in Indian cities is explained by a variety of factors: geological structure having a bearing on availability of sub-surface water; degree of dependence on traditional sources of water, such as open sunk wells; and capacity of the municipal bodies to manage water supply.

**Electricity**

It is the availability and not the actual use of the facility that is taken into consideration when ascertaining the access to electricity. The role of the state/agency responsible for extending the provision thus immediately comes to the fore. Secondary to this is the ability or need of the household to consume. Both facts find representation in the areal patterns of access to electricity of households residing in cities. Generally households residing in cities are better served than those residing in smaller urban settlements.

More than three-fourths of the urban households in India have access to electricity. Regionally speaking northwestern India, western India and northeastern India (barring Assam) are the regions that are best served (Map 9). Conversely, cities along the eastern coastal region, particularly its Orissa and Andhra Pradesh segments, in Kerala and in most of the Ganga-Yamuna plain excluding the delta region are relatively less served.
Once again patterns conform to state boundaries, highlighting the role of state policy and priorities. Maharashtra and Tamil Nadu lead in the production of power while Punjab leads in per capita consumption of electricity, followed by Maharashtra, Tamil Nadu and Gujarat. Electrification has been a priority for both agriculture and industry. In case a state is deficit in generation of power, as is true of Punjab, then excess demand is met by purchase from a neighbouring state.

Cities in the less developed states of Uttar Pradesh, Bihar, Assam and Orissa are noted for relatively low percentage of households having access to power. Ironically, cities in relatively developed regions of Kerala and the Godavri-Krishna delta in Andhra Pradesh also display a similar character. These cities are marked for a considerable rural character, especially if appended by outgrowths.

A fairly obvious fact that emerges from the analysis is the advantage that the larger cities enjoy in terms of access to electricity. All million cities barring Vishakhatpatnam, boast of electricity access to more than three quarters of the households. In fact, three out of every four million cities recorded more than 80% of the households as having access to electricity. On the down side, only 5 of the 53 worst served cities have a population of more than 300,000. Interestingly, a majority of the best-served cities also fall within this size category. Since these lie in regions of higher access to electricity, one may safely conclude that the small size of the city works to its benefit in the better served areas and to its detriment in the worst served areas. Conversely speaking, larger cities are comparatively less influenced by the region in which they are placed. In spite of being well served, however, they do not qualify as the best served cities. The reason is not far to seek. Close to 90% of the households that do not have access to electricity are bereft of toilet facility as well and their source of water is placed outside the residential premises. Clearly such
INDIAN CITIES

Households Having Access
to Electricity
1991

Greater Bombay
Kochi

Population
5,000,000 and above
1,000,000 - 4,999,999
500,000 - 999,999
100,000 - 499,999

Percentage in total
Highest (Patiala: 97.8)
90
75
Average: 76.2
65
Lowest (Haldia: 36.05)

Data Source: Census of India

Map: 9

Only metropolitan cities have been named.
households dwell in slum like conditions. Slums are concomitant with large cities and serve to moderate the access of these cities to electricity. This is also the reason why industrial and mining cities like Asansol, Durgapur, Raniganj, Bokaro, Korba, Durg Bhilainagar, Vishakhapatnam, Ranchi and Jamshedpur have lower access to electricity.

Access to electricity thus is influenced by the location of the city: proximity to or remoteness from areas of hydro-electricity production; the priority accorded to electrification by a particular state; and the incidence of slums in the city. Small cities reflect the character of the region in an accentuated manner while large cities tend to moderate it.

It emerges that access to electricity by virtue of its definition is the most sensitive of all indicators of housing quality. Not only does it conform to the presence or absence of kutchta houses, it is also indicative of the presence of slums and squatter settlements. The latter in turn provides a clue to the ease of availability of the other two amenities: drinking water and toilet facility.

**Toilet Facility**

Availability of toilet facility denotes a disease free, clean and agreeable living ambience. In addition it provides a degree of privacy and comfort, the former being of special relevance to the women of the household. Traditionally, spots for human excretion were located at a distance from the place of residence and their disposal was left to the natural process of decomposition. With a rise in population densities, space and time required for such processes to set in, much less complete, are no longer
available. In urban areas, the gradual disappearance of human scavengers has contributed to the obsolescence of the traditional system. Wet sanitation has thus become a virtual necessity.

A primary objective of the setting up of municipal bodies in cities was the provision of this facility. It comes as no surprise that the building of infrastructure related to sanitation was entrusted to the Public Health Engineering Department while its maintenance was put in the charge of the municipal body. The city administration, however, may not always be effective enough in all parts of the city and toilet facility may even be part of a subsystem put together by a non-governmental or community based organisation or it could have been installed by the household independently. As part of the city system, the provision of this facility is normally concomitant with or follows the provision of piped water supply.

Census data collected at the household level indicates that nearly two-thirds of the Indian city households have access to toilet facility. The proportion varies between a low of 20% in Sivakasi (Tamil Nadu) and a high of 94% in Rampur (U.P). Regionally speaking, the Northern plains, northeast hill states and coastal regions are better served while the northeast peninsula region, Chhota Nagpur plateau and the Deccan plateau are ill served (Map 10). The patterns of availability of toilet facility conform to those of socio-economic development in so far as the coastal regions being better served than the interiors; the mining and tribal belts of Central India being under served and regions under prolonged missionary influence being well served.

Size of the settlement emerges as an important determinant. Cities, in general, are better served than the smaller urban settlements within a region. Likewise five-sixths of the worst served cities have a population size of less than 300,000. The mega and
Indian Cities
Households Having Toilet Facility
1991

Population
- 5,000,000 and above
- 1,000,000 - 4,999,999
- 500,000 - 999,999
- 100,000 - 499,999

Percentage in total
- Highest (Agartala: 96.8)
- 80%
- Average: 65%
- Lowest (Sivakasi: 20.2)

Data Source: Census of India

Map: 10

Only metropolitan cities have been named
million cities are clearly better served than their smaller counterparts. Larger amount of investment flowing into these cities, on the one hand and a scarcity of human scavengers in these areas, on the other hand, explain this. The link of this facility with the level of urban infrastructure development, particularly provision of piped water supply, appears strong.

It is most often assumed that households residing in slums are bereft of the amenity of toilet. However a comparison of the percentage of population residing in slums and the percentage of households lacking access to toilet facility reveals an inexplicable gap between the corresponding sets of figures. Obviously there are households, in addition to the slum population, that lack access to toilet facility. The converse may also hold true. Households other than slum population that are bereft of toilet facility could be residing in outgrowths within urban agglomerations.

The above fact is substantiated when the data for the total urban agglomeration is compared with that part of the agglomeration that falls within municipal limits. It is observed that the availability of toilet facility is greater within municipal limits than for the urban agglomeration. The outgrowths of the urban agglomeration serve to lower the aggregate figures. The smaller the share of the city in the urban agglomeration, the stronger the hue of the outgrowths in aggregate data. The availability of the facility in Dhanbad U.A. was, for instance, as low as 47% and that in Dhanbad municipality as high as 67%. While the population of the urban agglomeration stands at 815005, that of the municipality is as low as 151789 (about 1/6 of the agglomeration). The influence of urban agglomerations is more pronounced in South India and in the case of special function towns like Dhanbad, Vishakhapatnam and Bhilai. It is relatively less in the Northern plains where the number of urban agglomerations is fewer and the proportion of city population far
outweighs that of the outgrowths. All of the above point to the role of the municipal body in the provision of this facility.

The size of the city exerts a positive influence on the availability of the facility. This may well be due to the better financial health of the bigger municipal authorities. Conversely speaking, the proportion of the outgrowths within the urban agglomeration has a negative effect on the aggregate picture. The same holds good for the proportion of slum population.

**Housing Quality Index**

An index of housing quality was arrived at, for every city separately, by aggregating the weighted scores on each of the indicators (Kutcha houses, availability of safe drinking water, access to electricity and availability of toilet facility) discussed above and normalising these against an average score of 100. The weight of the individual indicator was reached at by preparing a correlation matrix for all the indicators. It emerged (correlation matrix) that the availability of electricity is the indicator most representative of housing quality. A perusal of census data shows that the non-availability of electricity occurs largely in concurrence with a restricted availability of potable water and toilet facility. Further, the low availability of electricity is largely concurrent with the presence of kutcha houses (Maps 8&9). Understandably then the proportion of households residing in pucca and semi-pucca houses emerges as the next important indicator in determining housing quality.

Regional patterns of housing quality indicate clear north south and east west divides. Housing Quality declines from north to south and from west to east (Map 11). One finds a concentration of cities with high housing quality in the states of Punjab,
INDIAN CITIES
Housing Quality Index 1991

(基于安全饮用水、电力和卫生设施和居住在棚屋的指标)

-{Patiala: 120.4} 最高
-{Kanhangad: 67.2} 最低

数据来源：印度统计局

地图：11

只有大都市被命名
Haryana and Himachal Pradesh and their adjoining areas of northeast Rajasthan and western Uttar Pradesh. Another similar concentration of cities is to be found in Gujarat, Maharashtra and western Madhya Pradesh. Development priorities and efforts made on the part of the state, sound financial base of the larger municipalities located here and higher affordability at the household level, all combine to culminate in high housing quality in cities here.

Cities that rate low on the housing quality scale are located in the southern and eastern parts of the country. Except for the million cities, all others in Orissa, Andhra, Tamil Nadu, Kerala and interior Karnataka are characterised by low housing quality. In fact the regional complexion offsets the advantage of population size and a couple of ‘million cities’ (Vishakhapatnam and Chennai) along the east coast also score below average on the housing quality scale. Pervasive poverty in Bihar, Orissa, interior Andhra and Karnataka, vulnerability to frequent cyclones of the cities located along the east coast and the predominance of urban agglomerations, with outgrowths having village like conditions, in Kerala, all serve to bring down the housing quality.

City’s population size finds a positive association with housing quality. All the ‘million cities’ except Vishakhapatnam and Chennai have an above average housing quality score. Even more significant is the observation that million cities perform better than all other cities of the region of their location. As a corollary, million cities located in regions of high housing quality such as Bombay, Pune, Ludhiana, Vadodra, Jaipur emerge as the best served cities. The better financial status of the larger municipalities owing to their larger resource base and greater credit worthiness works to their advantage. The latter makes it easier to obtain loans for infrastructure augmentation. Larger cities have also been the beneficiaries of a number of
programmes initiated to augment infrastructure. These included programmes aimed at slum development.

Discounting the effect of the ‘non city component’ within an urban agglomeration in bringing down the housing quality of a city, it appears that two factors are most crucial in determining the state of housing quality of a city. The first pertains to the development level of the region, and second relates to efforts made by the state in augmenting and improving the citizens’ access to basic infrastructure. While the role of the former factor becomes fairly obvious in the preceding paragraphs, the effect of the latter is borne out by the homogeneity in housing quality patterns within state boundaries. Further, there is no arguing the fact that a large measure of the success met in the provision of basic amenities flows from the efficacy of the institutional framework and the functioning of the latter is circumscribed within administrative boundaries. State policy, so, plays no insignificant role in influencing the housing quality of Indian cities.

Finally, despite having worked out the aggregate housing quality picture, one can’t help but observe low housing quality may result from a dismal performance along one or more particular indicators. To elucidate, while the cities of Kerala suffer from dire paucity of safe drinking water, lack of toilet facility is the major disabling factor in Tamil Nadu. Bihar is weak as far as provision of electricity and toilet facility are concerned. Andhra Pradesh and Orissa suffer from poor housing quality along all the considered parameters. In the case of the former three states at least, greater effort in the provision of one or two services that the cities of the states particularly lack, might yield improved housing quality.
Conclusion

The scenario on the housing front in Indian cities arouses a great concern. Every third household is bereft of toilet facility, every fourth household lacks electricity, every fifth household is denied access to safe drinking water and every tenth house is kutcha. Every second household lacks, at least one among the three urban amenities of safe drinking water, electricity and toilet facility.

Regionally speaking housing quality in Indian cities declines from west to east and northwest to southeast. This finds an association with the development level of various areas. Factors that influence these patterns include location of the city, priorities of state in provision of urban services and their efficiency in managing these, the efficacy of municipal bodies and the presence of urban agglomerations.

Smaller cities tend to manifest regional patterns in an accentuated manner whereas the larger cities emerge as better-served in spite of the proliferation of slums. The latter in turn leave their mark and serve to moderate aggregate access levels. Most planned cities reflect the picture of the region where they have been planted. Industrial townships, particularly those dependent upon single large scale industry and mining townships do not fare well on the parameters of housing quality. It follows that urbanisation in the absence of regional development fails to stimulate an improvement in living conditions. On the other hand, functional diversification in cities leads to a vibrant economic base reflected in improved living conditions. Bombay, the best served among all mega cities, is a prime example.

An overview of the relative strength of various indicators shows that the incidence of kutcha houses influenced by the ecology and economy of the region, best reflects the
incidence of poverty and slum proliferation and thereby the quality of housing. Access to electricity is more a matter of state policy, legality of tenure and affordability of household. It is also an effective representative of housing quality. The availability of toilet facility is linked to levels of socio-economic development and the ability of the urban local body to provide this facility. Access to drinking water is a rather soft measure and is biased towards regions with a favourable geological structure. In simple words, pucca structures facilitate the provision of all basic facilities and thereby are critical to ensuring quality of housing.