

Leaving Poor to Their Own Devices – Case of Amraiwadi, Ahmedabad



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(An NRC for Ministry of Housing and Urban Poverty Alleviation, Government of India)
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Disclaimer

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1.0 Introducing the Area

Amraiwadi is located in the eastern segment of the city, which has historically developed as an industrial area; since the beginning of the 20th century the cotton textile mills were located there and later the new industrial estates housing small scale industries. While the cotton textile mills were typical Fordian welfare units, with organized and well paid labour force housed in employee housing, the small scale industrial units were typically unorganised manufacturing. The textile mill housing was referred to as *chawls*, which are single room dwelling units laid in a row and provided with common water and sanitation facilities. East Ahmedabad is marked by such low income housing units. The workers of the unorganised manufacturing units began to live in informal settlements, either developed as squatter settlements or informally subdivided private lands coming under various reservations of the city's Development Plan (DP) or for acquisition under the Urban Land Ceiling and Regulation Act (ULCRA), 1976. Such settlements developed on a large scale in this segment of because of the demand from this industrial working class who typically desired a house close to their work place. Such informal and squatter settlements developed on a large scale in the 1980s and 1990s.

Another significant phenomenon occurred during late 1980s and early 1990s; the cotton textile mills went into decline and closed down. But, their *chawls* remained and continued to house the former cotton textile mill workers. The parent unit, the textile mill having closed down and the residents of these *chawls* no longer being the employees of the mills, the mill owners were not interested in maintaining such dwellings. Since these *chawls* were under rent control legislation, the owners could not increase the rents. The owners therefore did not renovate the *chawls* where conditions deteriorated into slum type of housing. A few *chawl* owners offered the occupants to purchase their dwelling units so that the former could get rid of the burden and such transactions indeed took place in many *chawls*. In our field work we have come across several instances where a few dwelling unit occupants had not purchased the units when the majority had. In all, the land tenure arrangements became complex. In some cases where the owners stopped collecting the rents and the occupiers became the *de facto* owners. Many of the closed mill lands were encroached upon by the poor and recent-migrants and today there are slums existing on those lands. Even the open lands in the former *chawls* have been encroached upon and the entire settlement has become a slum.

The informal settlements on land reserved in the Development Plan or notified for acquisition under the ULCRA, 1976, were subdivided by the owners themselves and sold off to the buyers through an agent. Some owners, who could not manage the sale, gave Power of Attorney (POA) to a middleman – we can call this person an informal market developer – to subdivide the land and sell it in small lots to the buyers. The informal developers would carry out a transaction on a piece of paper on which a revenue stamp is affixed or more generally on a stamp-paper of some denomination¹. A stamp-paper document certifies the transaction of money but does not state anything about the land ownership. Land ownership documents

are an entirely different set of documents. However, most slum dwellers think that they have a right to the land when they hold the stamp-paper document of transaction. These new settlements through the informal sub-divisions of land are also called *chawls*. The new informal settlements developed thus have been largely given on ownership basis, but, some owners have converted them into *chawls* for renting out.

According to survey conducted in 2001 by Ahmedabad Municipal Corporation, Mahila Housing Trust (MHT) and Saath to identify slums for the Slum Networking Programme (SNP), 458 slums and chawls (or 27 per cent) of the total 1666 in the city, were located in the east zone of the city. (Annexure 1) Ahmedabad city is divided into six zones in which the new west zone has been included in the municipal limits in the year 2006. Amraiwadi is among the ten wards in the east zone and has the largest number of slums and *chawls* among the wards in this zone.(Annexure 2) In fact, when we went round the entire zone to select a ward for our survey, we observed that the entire ward comprised slums and *chawls*. Some of the adjoining wards such as Bapunagar, had many large public housing units. Another reason for selecting this ward was also presence of the MHT in the ward for the SNP projects.

2.0 Methodology

Six slums in this Amraiwadi ward have been selected after looking at the available data from the above mentioned survey and Focussed Group Discussions (FGDs) in each of the slum. We shortlisted slums for personal visit from the survey data available with us. This visit was meant to verify the available data and get a general idea of the tenure in the short-listed slums. We selected six slums for detailed analysis and carried out FGDs as well as structured questionnaire surveys in the slums. The tenure arrangements have been analysed based on the data of ownership of the land, documents available with the households, coverage of slum under any development scheme by the government or non-government organisations, land reserved in the city's DP or the Town Planning Scheme (TPS), slum size, receipt of property tax bill and age of the slum. Many of the details were obtained through the FGDs with the slum dwellers and some of the details were obtained from various city government departments. The six slums selected for the survey are: Sanjaynagar, Patravali chali, Talavadi na chhapra, Gopalnagar, Satyamnagar and Surabhagat ni chali. The details of the sample are given in Table 1.

Table 1: Sample Size

Name of the slum	Total households	Sample households	Sample proportion
Sanjaynagar	117	16	13.7
Patravali chali	400	35	8.8
Gopalnagar	350	33	9.4
Surabhagat ni chali	150	19	12.6
Satyamnagar	2,000	199	10.0
Talavadina chhapra	1,200	135	11.3
Total	4,217	437	10.6

All the six slums selected showed that each one of them had mixed communities and unlike slums in Vasna (another location of our research), there were no separate streets or areas (called *wadas*) for specific communities. Hence, we did not undertake a caste-stratified sample. The average sample is 10 per cent.

It has been observed in Amraiwadi that the tenure security was highly dependent on the type of the land ownership. If the land is of the state government or of the AMC, there are high chances that the government would want to use the land for the development purposes and the slum dwellers would be evicted from the area. Generally, the dwellers of such slums do not have any legal documents of either the ownership or use right of the house. If the land is reserved for some purpose in the development plan of the urban local body, the slum is not considered for SNP, which extends *de facto* tenure security to the dwellers for a decade. Thus, except extension of basic services, there is no other development initiative in such slums either by the government or NGOs. As the slum dwellers are constantly under threat of eviction they do not invest in houses and even basic services.

One such slum selected in this study is on the AMC land and is an interesting case. It is located on a pond, which was gradually filled up and encroached upon as the slum expanded. However, only a part of the slum is on former pond whereas other part is on AMC land. Talavadi in Gujarati means a small lake or a pond and this slum is called Talavadina Chhapra, which means huts on the pond-side. This pond is the property of the urban local body. This slum has expanded through accretion and at the time of the survey there were 1,200 dwelling units in this slum. Households on the part of the slum on the demarcated pond area had received notice of eviction as the city has begun reviving all such encroached upon former water bodies to increase ground water recharge in the city. Water tables in Ahmedabad are very low and the city has been forced to purchase water from external sources incurring heavy expenditure. This is a common phenomenon in the urban area where one generally observes slums on the bank of river, lake side, near open drain lines, railway lines etc, and such slums are the highly insecure as they could face eviction anytime. With the environmental agendas as well as city infrastructure projects coming up in many cities, such slums have been marked for demolition.

The AMC has divided the land of Talavadina chhapra into three plots. Of these, the AMC has approved one plot for implementing SNP and where a non profit organisation called World Vision has mobilised the residents for SNP and MHT has implemented the SNP. The remaining two plots have been considered as encroachment and the AMC has not shortlisted these for the SNP and their dwellers have received eviction notices. In fact, the households in these two parts have already faced eviction twice. Since the SNP has been implemented only on one part of the slum, we did not find much improvement in the living conditions in the whole slum, like we found in another SNP slum nearby named Sanjaynagar. Sanjaynagar is located on private land and hence has a higher degree of tenure security as compared to Talavadina chhapra. The evicted households come back and squat on the same land after

sometime as the AMC is unable to undertake any further development on the land post evictions.

Four slums in the sample, namely Sanjaynagar, Gopalnagar, Surabhagatni chali and Patravali chali, are on private land. Since the AMC does not have any direct control over such lands, it cannot evict the slum unless it sends a notice of land acquisition for a stated purpose. This is the case in Ahmedabad and in Surat. For this study, therefore, we consider slums on private lands as having higher order of tenure security than the slums on the state or local government lands. The genesis of such slums is that the lands originally belong to a farmer whose children would inherit the land after subdivision. The farmer himself would have inherited this land from his ancestors after subdivisions. When such lands on the urban periphery but not in the urban area, realise the potential of development but are unable to obtain Non-agriculture (NA) conversion permission, their owners sell such lands to agents (in essence informal market developers) who in turn sell the sub-divided plots to the buyers at the prevailing market rates. The original owner (the farmer) and in case there were tenant-cultivators on the land, their names would be in the land ownership document, which is called 7/12 document. The land agents sell the sub-divisions to the buyers through an agreement on a stamp-paper of various denominations, as already discussed. In our survey in this ward, we found that the sale-agreements were made on a stamp paper of Rs.10. The four slums in our survey and then many others in the vicinity that we had visited had developed in this manner.

Some slums in the locality had also come up on lands notified for acquisition on the promulgation of the ULCRA, as already described. In these cases, although the original farmer's name is on the land ownership document, it is marked as land to be acquired in the official land records. Since the land has not been acquired, it remains locked as marked for acquisition and no further permission for development is allowed on such lands. In essence, the land transactions on such lands marked for acquisitions remain frozen. But, such a state offers high degree of tenure security to the dwellers, except that they are unable to obtain legal title to the land and hence are unable to offer the land as mortgage in case they would like to take a housing loan.

Somehow these slums have either NGO or government intervention. SNP has been done in Sanjaynagar and there is a strong intervention of MHT. Under SNP, this slum has been given *de facto* tenure for 10 years by the AMC. All the dwellings are receiving property tax bills, in which, the land owner's name mentioned is Jiva Gopal and the occupant's name as that of the existing occupant. Property tax bill is an important evidence of occupancy. Even the slum dwellers prefer to get property tax bill and pay it because it gives them security against eviction and even if eviction does take place, there is the possibility of rehabilitation. In Gopalnagar there is intervention of two NGOs, MHT and World Vision while in Patravali chali, MHT has intervened and tried to extend basic services. In both the settlements the residents receive the property tax bills. Surabhagatni chali is settled on private land but the

councillor of that area has provided community toilets and pavements in the settlement. Even in this slum residents receive property tax bills.

Besides public and private lands, slums are also to be found on industrial land and trust land. The trust lands are generally owned by a religious or charity trust. In Ahmedabad there is a graveyard called Chartoda Kabarstan which belongs to a Muslim Trust. This trust has given land illegally to Muslim households to build houses. One portion of the land has graves and the remaining area is a slum. When AMC and MHT wanted to implement SNP in the slum, the trust did not allow them. The trust did not want a sewerage line to pass through the land as they considered the graveyard a religious place.

The industrial lands are generally the old mill lands. The earliest low income housing developed in the city was built by the mill owners who constructed *chawls* to house their workers of which many deteriorated. While some *chawls* had common basic facilities and some had none at all. Over time, some *chawl* residents managed to get illegal water supply and constructed soak pits. The units changed hands many times even if they were under rent control. When the owners stopped collecting rents, the tenants became *de facto* owners but not legal owners: they could neither transact the property in the legal market nor offer the property as a mortgage for loan. Even when the textile mills closed down and the workers were retrenched, *chawl* residents did not become homeless; they continued to live in these *chawls* inspite of their deterioration. The rents collected were so low, as low as Rs. 5, Rs. 7 that the workers did not feel the pinch of retrenchment. Even the price of a cup of tea at the roadside stall would cost about Rs. 4 in 2009. Satyamnagar is one such settlement. Because of this situation, it was also not selected for SNP. Some of the residents of this settlement have themselves managed to get individual water taps, individual toilets and bath space. While the tenure situation of this land is not very clear, clearly, it is more secure than the slums on municipal land.

For purpose of analysis, we have categorised the slums into three groups, those on private land have been put as slums in category 1, those on other lands such as mill lands, trust lands, etc. as category 2 and those on public lands as category 3. By tenure status, we consider the slums on public lands to be the most insecure. Since all dwellers have been living in the slum for more than 20 years, we could not capture much variation in their years of stay and have therefore not done an analysis by year of stay.

2.1 Sample Profile

The total sample in this ward is of 437 households, covering 2,189 persons. The overall sex ratio in the sample is 899 but that in the slums on private land is the highest, 935, which is higher than even the city and state average. In 437 households, 2189 persons have been covered in the study. The sex ratio in the slums on private land is highest among all the categories at 935 (Table 2), followed by the slums on public land, which is 927 and both are higher than the sex ratio of 886 for the whole city in 2001. This means that these are settled settlements and households are living with families. But, interestingly, in the slums on trust

and industrial lands, the sex ratio is 863, which is lower than the average of the city, indicating that these settlements could be housing single male migrants.

Table 2: Sample and Its Profile

Land ownership	Total households	Sample households	Sample population	Sex ratio	Household size
Private	1,017	103	474	935	4.6
Mill land	2,000	199	1,006	863	5.1
Public	1,200	135	709	927	5.3
Average	4,217	437	2,189	899	5.0

The average household size in the sample is 5, but that in the slums on the public lands is 5.3 and in the slums on private lands is 4.6 (Table 2). One could interpret this as due to reducing family size with increasing incomes in the household. In the households on trust and industries' lands, the size is 5.1. We can interpret this as many households having many single male migrants living together.

3.0 Tenure Status

As mentioned above, the tenure status is determined at the settlement level depending on the ownership and earmarked use of the land. This issue has been discussed at length in the introductory section. Thus, slums in land ownership category 1 are the most secure slums, but, without legal land title. The status in land ownership category 2 is also the same. But, slums in land ownership 3 are most insecure. At the same time, tenure security is also defined at individual household level depending on the documents that each household holds. The documents such as quasi-legal document of financial transaction of house (sale document on a stamp-paper), property tax payment receipt or even property tax bill, electricity bill, voter's ID card, and a ration card, give *de facto* tenure status to the household. Hence, in a settlement with *de facto* tenure status, residents could have differential level of security.

Chart 1: Summary of Slums Selected for Study, Amraiwadi Ward

Items	Settlement name					
	Sanjaynagar	Patravali chali	Gopalnagar	Surabhagatni Chali	Satyamnagar	Talavadina Chhapra
No of Households	117	400	350	150	2000	1200
Land Ownership	Private	Private	Private	Private	Mill land	Municipal
Documents with H/H	10 years <i>de facto</i> tenure, property tax bills, stamp papers document,	property tax bills, stamp paper document,	property tax bills, stamp paper document,	property tax bills, stamp paper document,	Electricity bill	Electricity bill

	electricity bill	electricity bill	electricity bill	electricity bill		
Tenure Status	Strong <i>de facto</i>	Weak <i>de facto</i> tenure	Weak <i>de facto</i> tenure	Weak <i>de facto</i> tenure	Insecure tenure	Insecure Tenure
Housing condition	Semi- <i>pucca</i>	<i>Pucca</i> / semi- <i>pucca</i>	<i>Pucca</i> / semi- <i>pucca</i>	Semi- <i>pucca</i>	<i>Pucca</i> / semi- <i>pucca</i>	<i>Katcha</i>
SNP	Yes	No	No	No	No	Yes
Individual water tap	Yes	Yes	Yes	Yes	Yes	Yes
Individual Toilets	Yes	Yes	Yes	Community / personal	Yes	Yes
Who provided toilets	SNP	Self	Self	Self / AMC	Self	NGO
Individual Bathing space	Yes	50 percent	50 percent	50 percent	50 percent	50 percent
Sewer line	Yes	Yes	Yes	Yes	Yes	Yes
Rain water Drain	Yes	Yes	Yes	Yes	Yes	Yes
Garbage collection	Yes	Yes	Yes	Yes	Yes	Yes
Paved Roads	Yes	Yes	Yes	No	Yes	No
Street lights	Yes	Yes	Yes	Yes	Yes	Yes

There are four slums on private lands in the sample, of which one, Sanjaynagar has strong *de facto* tenure (Chart 1) and three, Patravali chali, Gopalnagar and Surabhagatni chali have weak *de facto* status. The slum on the mill land, Satyamnagar, has insecure tenure and Talavadina chhapra on municipal land has insecure tenure. In spite of insecure tenure at the settlement level, the households receive electricity bill. Sanjaynagar has been granted 10 years of *de facto* tenure under the SNP. Households in this slum also get a property tax bill, an electricity bill and have carried out property transactions via stamp-paper document. Households in the other three slums on private lands also have similar documents as in Sanjaynagar but do not have 10 year *de facto* tenure from the AMC. The households located on the mill lands in Satyamnagar are tenants and hence do not have right over the property. They would not be evicted but do not also have any documents to support their residency in the city. Hence, we have classified them as insecure tenure. But, the most insecure of them all are the households living in Talavadina chhapra on municipal land.

The older dwellers of Satyamnagar informed that the settlement land was originally owned by a mill and the houses were for its workers. But when the mill closed down, the land owner could neither remove the workers nor increase the rent because of the Rent Control Act. Some of the households purchased the house from the owner and have the documents of the house by paying the stamp duty but a few households continue to pay older rents fixed under the Rent Act which range from Rs. 10 to Rs. 70 per month.

Eighty per cent households living on public land claim that they own their current house (Table 3). This slum is on a public land and the slum dwellers have encroached upon the land and constructed houses. Thus, the houses are self-owned but not in the legal sense. Hence just 10 per cent of them have any document regarding land ownership. But, there is also renting-out occurring in such encroached settlements. In spite of illegal status, around 17 per cent of

them are receiving property tax bills. AMC has taken eviction action twice on this settlement (where SNP has not been undertaken).

In all the slums on private lands, only half of them (51.5 per cent) have some document of property transaction (Table 3), often a document of sale on stamp-paper. Three fourths of them are now getting property tax bills. Even in these slums, two in every three households have constructed their own house. This indicates that they had purchased the plot from the land owner or a developer who had subdivided the land and sold the plots and then constructed their own dwelling unit. As already mentioned, there is a large quantity of self-built housing on sub-divided private lands in Ahmedabad with those who believe they have strong *de facto* tenure which results in improved living conditions, which we see in the next section.

Table 3: Tenure Status

Land ownership	% owning house	% having any document of property transaction	% paying rent	% receives property tax bills
Private	66.0	51.5	8.7	74.8
Mill land	66.8	69.9	16.1	56.8
Public	80.0	10.2	3.7	17.0
Average	70.7	45.0	10.5	48.7

The slum on the mill land has one in every six household renting the dwelling unit. But, another two thirds say that they own the house. This means that they have purchased the house from the original mill owner and 70 per cent of them have a document of the property transaction. But, just 57 per cent of them receive property tax bills.

Tenure status gets determined even by duration of stay in a settlement. In fact, it is tautological; if a settlement has not been demolished for a long then it has high *de facto* tenure and there is higher perceived security of tenure leading to the households investing in housing and in themselves. At the same time, the longer one lives in an urban area, with increase in age, income increases, leading to possibility of investment in housing. The longer the duration of stay, higher are the chances of the local government also investing in the settlement to improve local living conditions.

Table 4: Duration of Stay in City

Land ownership	Years of living in city (%)		
	Less than 10	10-20	More than 20
Private	4.0	7.1	88.9
Mill land	4.6	1.0	94.3
Public	6.7	0.7	92.6
Average	5.1	2.9	91.9

In our surveyed settlements, only 5 per cent of the households have come to the city in the last one decade and 92 per cent of them have been living in the city for more than 20 years. In

all the three categories of slums, about 90 per cent or more households have been living in the city for more than 20 years. Is there commensurate improvement in the living conditions? As we will see later, the answer is no. At the national level also, the National Sample Survey (NSS) data shows that the basic services situation in many slums is abysmal in spite of the population living in the city for more than 20 years. This indicates two things, failure of public policy on one hand but more seriously, on the other hand, a bias against the low income migrants in the cities. We also found that almost four in five of the households have been living in the same settlement since they came to the city and those who had moved had come to the current place of residence from the nearby areas.

4.0 Physical Conditions in Slums

4.1 Housing Conditions

It has been argued repeatedly by researchers as well as policy advocates that a shift from insecure to perceived tenure security would result in residents making significant investments in their housing. Further, it has also been found that the investment is incremental and hence improvement is also incremental. Any action by the government to increase perceived security of tenure also gives the slum residents a legal address and thereby urban citizenship. With insecure status, people are not willing to invest and they continue to live in the shabby dwelling for a lifetime. That is the reason why in category 3 there are maximum *katcha* houses (78.5 percent) and just 1.5 per cent lives in *pucca* houses (Table 5). This slum is Talavadina chhapra, where *pucca* and semi *pucca* houses are only in the part where SNP has been done.

A *katcha* house is made of temporary wall materials and temporary roof materials. *Pucca* housing is when the wall and roof materials are all of permanent type. Semi *pucca* houses are in-between, when the walls are of permanent materials and roof of temporary materials.

Nearly a quarter of the houses in the slum on the mill land are *pucca*, double the average proportion of the surveyed households (Table 5), probably because these were constructed by erstwhile mill owners. But, the mill *chawls* were largely semi-*pucca* houses and hence 71 per cent of the households lived in such housing in trust owned and industry owned land.

Even in slums on private lands, more than half (51.5 per cent) are living in semi-*pucca* houses. But, in this category, 44 per cent are living in *katcha* houses. While talking so some of the women of Sanjaynagar and Patravali chali, it was found that the residents were waiting for some scheme from the AMC or the SEWA Bank to finance construction of ceilings. Households are ready to take loan to do so and may approach SEWA Bank for their individual product loan. On the whole only 12.6 per cent households are living in *pucca* house and nearly half the surveyed households in this ward are living in semi-*pucca* houses.

Table 5: Housing Conditions

Land ownership	Percentage households							
	Living in house that is			With no of rooms				Living in house with separate kitchen
	<i>Katcha</i>	<i>Pucca</i>	Semi <i>Pucca</i>	1	2	3	More than 3	
Private	43.7	4.9	51.5	69.9	27.2	1.9	1.0	24.3
Mill land	4.5	24.1	71.4	64.8	33.7	1.0	0.5	15.6
Public	78.5	1.5	20.0	65.2	33.3	1.5	0.0	11.1
Average	36.6	12.6	50.8	66.6	31.4	1.5	0.5	16.2

Two-thirds of houses have single room and there is very little variation across the land ownership category as regard the size of the house. This is a reflection of lack of affordability of larger houses in this industrial ward of the city. Lastly, a quarter of the households in the private slums have a separate kitchen area whereas this proportion in the slum on public land is only 11 per cent. Thus, conditions of housing of those living on private lands is far better than those living on public lands and that the former are willing to take loans to improve their housing conditions whereas the latter are not willing to do so.

In the last category, especially on the slums constructed on the public land, which in fact is a pond area, dwelling units have been laid haphazardly as and when the people came to reside there. But, an advantage of this has been that 48 per cent had open land in the front and the back of their houses. This was not the case with the slums on the private lands where the agent has done subdivisions in small plots and the real estate market greed has pushed them to leave no open space in the front or back of the dwelling units.

4.2 Basic Services Availability

The definition of housing is much wider than just house structure. The 1996 Global report on human settlements had defined poor in the context of “housing” as the individuals who lack safe, secure and healthy shelter with basic infrastructure such as piped water and adequate provision for sanitation, drainage and removal of household waste. Thus, shelter security or alleviation of housing poverty would imply access to basic services such as water supply, sanitation and electricity. In the following sections we have looked at whether land status of a settlement has any influence on the availability of basic services to the dwellers.

Table 6: Source of Domestic Water Supply

Land ownership	Main source of water				
	Individual connection	Public tap	Private water supplier	Hand pump	Neighbour's connection
Private	94.2	2.9	1.9	0.0	1.0
Mill land	80.9	12.6	1.5	4.0	1.0
Public	95.6	2.2	0.7	0.0	1.5
Average	88.6	7.1	1.4	1.8	1.1

In spite of insecure status in the slum on public land, 96 per cent of the households had individual water connection and none depended on hand pump (Table 6). In fact, dependency

on hand pump was noticed only in the slum on the mill land (4 per cent households depended on it). Further, 13 per cent households in the slum on mill land depended on common public water tap and hence just 81 per cent had individual water connection. Given these minor differences in water source, nearly 89 per cent of the surveyed households had individual household level water connection and another 7 per cent depended on public taps, indicating that the water supply situation was not too bad in the slums surveyed in this industrial ward. It also shows that the water supply availability is not linked to either land ownership or tenure status and that the AMC was supplying water to all the slum settlements in the ward.

Table 7: Details of Obtaining Individual Water Supply

Land ownership	Period since individual connection available (years)				Agency responsible for individual water connection		
	0 to 5	5 to 10	10 to 15	More than 15	AMC	NGO	Self
Private	36.1	24.7	10.3	28.9	62.9	13.4	23.7
Mill land	64.0	16.1	6.2	13.7	89.4	0.6	9.9
Public	90.7	9.3	0.0	0.0	69.0	27.1	3.9
Average	65.9	16.0	5.2	12.9	73.8	13.7	12.5

About 66 per cent of the households have received individual water connection (if they have) in the last five years and another 16 per cent in last five to ten years (Table 7). In the slums on private lands 60 per cent, in the slum on the mill land 80 per cent and in the slum on public land all of them had obtained individual water connection in the last 10 years. In short, the individual water supply connection has come to the households in the last decade only and for three-fourths of them, the AMC has supplied this connection. An NGO has played a role in extending individual water supply connection in one slum on the private land (which is the Sanjaynagar) and in slum on the public land also, 27 per cent of households have obtained individual water connection through the NGO MHT, who has facilitated extension of basic services in the two slums in our sample. In Sanjaynagar, MHT facilitated SNP implementation and the basic services were provided by the AMC. But, because the MHT had mobilised the households for the purpose, they presume that MHT had provided them individual water connection. Nearly a quarter of the households living on private land stated that they had obtained individual water connection on their own, indicating that they might have obtained it without the AMC knowledge, most probably getting an ‘illegal’ connection through some local unofficial actors.

Table 8: Water Storage at Dwelling Unit Level, Amraiwadi, Ahmedabad

Land ownership	Storage of water		
	Water tank	Bucket	Pots
Private	41.9	16.1	41.9
Mill land	34.3	5.6	60.2
Public	46.0	8.0	46.0
Average	40.7	9.9	49.4

Nearly half the households stored daily domestic water in pots while another 10 per cent stored it in buckets (Table 8). Need for storing water arises because the AMC supplies water only for two-three hours in the morning and an hour or so in the evening. In the summer

months, water is supplied once. Thus, although the households do have individual level water connection, they need to store water for use through the day. Only two in every five households have been able to construct a water tank for storing water. The households living in the slum on the mill land largely store water in pots or in their buckets and just 34 per cent have been able to construct a water tank to store water.

Table 9: Adequacy and Quality of Water, Amraiwadi, Ahmedabad

Land ownership	% households stating adequacy of water supply	Quality of water			
		Very good	Good	Average	Bad
Private	95.1	14.0	74.0	11.0	1.0
Mill land	88.4	6.6	80.2	10.4	2.7
Public	88.9	14.5	75.8	8.9	0.8
Average	90.2	10.8	77.3	10.1	1.7

As high as 90 per cent of the households stated that they had adequate water supply, on further probing, an average household consumption in these six selected slums is 52.8 litres per day. This means that the water consumption is only 10.5 Litres Per Capita per Day (LPCD), which is quite low. We could not obtain the exact information on quantity of water supply per day because it varies everyday according to the slum dwellers. But, the water consumption is determined by water availability, indicating that the low water consumption is on account of low water availability.

~~As~~ According to the Bureau of Indian Standards, IS: 1172-1993, minimum water supply of 200 LPCD should be provided for domestic consumption in cities with full flushing systems. IS: 1172-1993 also mentions that the amount of water supply may be reduced to 135 LPCD for the Low Income Groups (LIG) and the Economically Weaker Sections (EWS) of the society, and in small towns (Modi 1998). The national Ninth Five Year Plan (1997-2002) had advocated the requirements of water in urban areas as 125 LPCD in cities with the planned sewerage systems; 70 LPCD in cities without planned sewerage system; and 40 LPCD for those collecting water from public stand-posts. However, in the Tenth Plan (2002-07), the cities with planned sewerage system have been categorised into two groups based on population, i.e., metropolitan or megacities and non-metropolitan cities. In the former, the recommended minimum water supply level is 150 LPCD and in the latter 135 LPCD (Government of India 1997-2002). The National Commission on Urbanisation (1988) recommended that a per capita water supply of 90-100 LPCD is needed to lead a hygienic existence, and emphasised that this level of water supply must be ensured to all citizens (Ramachandraiah 2001).

The World Health Organization (WHO) classifies the supply and access to water in four service categories- (1) no access (water available below 5 LPCD), (2) basic access (average approximately 20 LPCD), (3) intermediate access (average approximately 50 LPCD), and (4) optimal access (average of 100-200 LPCD) (WHO, 2003; see also Bartram, 2003). Thus, all

the households in our survey fall into the second category, those with basic access and but closer to the category of no access than the category of intermediate access.

The quality of water supplied is good and very good. Just about 12 per cent households in all the slums stated that the water was of average or bad quality (Table 8) and the rest stated that the quality was good or very good. The variation of water quality across the slums is very low.

It is a common sight in any slum in India; women lining up with pots waiting for water and men and children defecating in the open. The health and environmental costs of inadequate sanitation in slums are huge. Often public toilets are not maintained and cannot be considered safe and sanitary. In many cases, the sewer is not really a viable option because they do not function properly due to inadequate water for flushing, blockages and the frequent failure of pumping stations. Disposal of sewerage is often neglected. Many residents of slums defecate in the open and even when they use toilet, most of the human waste goes into open drains. While, the lack of viable sanitation solution in slums contributes to serious health and environment risks for the entire city, not just those living in slums, the urban poor are particularly vulnerable to infection from contaminated water. The health impact of unsafe water and lack of basic sanitation facilities has been well documented by many experts.

Table 10: Access to Latrines

Land ownership	Toilet type					If shared than no. households sharing
	Individual	Shared	Settlement	Pay & use	Open defecation	
Private	83.5	9.7	3.9	1.9	1.0	11
Mill land	80.4	11.1	3.0	5.0	0.5	10
Public	91.9	1.5	0.0	0.7	5.9	18
Average	84.7	7.8	2.3	3.0	2.3	13

Research has shown that security of tenure in particular improves sanitation access and households construct individual toilets. As soon as tenure situation improves, the households attempt to save money and construct an individual toilet for themselves because the common toilets are not maintained properly. Also, the external agency, such as a local government or a NGO could assist the households in constructing an individual toilet. However, there has to be enough space available outside the dwelling unit to do so. Households do not choose to have a toilet inside the house. In slums where it is technically not feasible to get a sewerage line up to the house or construct a toilet due to lack of space, common toilets have to be constructed. Thus, in Surabhagatni chali, the councillor of the area has provided common toilets, as the slum has weak *de facto* status and the households were not willing to invest in toilets. In Talavadina chhapra where houses do not have space to build individual toilets and also do not have any tenure security, households have opted for common or shared toilets wherever possible with the help of MHT.

Our data however shows no relationship between the tenure security and availability of toilets. For example, the most vulnerable of all the settlements is the Talavadina chhapra on the municipal land, where as high as 92 per cent households had individual toilets. Even so 6 per cent of the households defected in the open (Table 10). Both these proportions were highest among the three categories of slums and thus higher than average for all the surveyed households. The largest extent of sharing was observed in the slum on the mill land where 14 per cent shared a toilet either at the settlement level or among few households and another 5 per cent used pay and use toilet. Situation of toilet access in the private slums was not much different than among the slum on mill lands. But, in Sanjaynagar, nearly all households had access to individual toilet on account of implementation of the SNP.

Table 11: Sewerage Availability

Land ownership	% Households having sewerage connection	Type of sewerage			% households stating choking of sewerage lines
		Below Ground	Open Drain	Other	
Private	99.0	100.0	0.0	0.0	34.3
Mill land	95.0	100.0	0.0	0.0	24.3
Public	97.0	100.0	0.0	0.0	29.8
Average	97.0	100.0	0.0	0.0	29.5

Similarly, sewerage connection is also not related to tenure security or land ownership of the slum as almost all the households claim that their dwelling units have sewerage connection and that too, all underground (Table 11). The fact is that except the slums where SNP has taken place, the sewer connections are not legal. The slum dwellers have linked their household drains to the main sewer lines on the road. These sewerage lines choke every now and create problems such as spread of filth and stink in the settlement. At such times, health and hygiene of the dwellers, in particular of the children suffers. Nearly 30 per cent households stated that their sewer lines choke intermittently.

Table 12: Period of Getting Individual Sewerage Connection

Land ownership	Period since individual connection available (years)			
	0 to 5	5 to 10	10 to 15	More than 15
Private	37.5	40.6	9.4	12.5
Mill land	58.9	11.1	4.4	25.6
Public	94.9	5.1	0.0	0.0
Average	69.5	15.4	3.7	11.4

About 70 per cent households had obtained household level sewerage connection in the last five years only and another in the last 5-10 years indicating that the improvement in the sewerage situation has taken place only in the last one decade (Table 12). In the slum on the public lands, the improvement has been only in the last five years whereas individual connection in the slum on mill lands has been for more than 15 years.

Piles of garbage and waste of all kinds littered everywhere has become a common sight in the urban life. Many cities generate more solid waste than they can collect or dispose. Even when

municipal budgets are adequate for collection, the safe disposal of collected waste often remains a problem. Dumping and unmanaged landfills are sometimes the main disposal methods in many Indian cities. Sanitary landfills are the norm in only a handful of cities. Inadequate collection and unmanaged disposal of solid waste presents a number of problems for human health and productivity. Slum dwellers in particular are more vulnerable to the uncollected waste generated by them than any other waste. To avoid this predicament and create awareness about cleanliness, one must start at the household level. However, the key question is how many slum dwellers even have dustbins in their homes.

Table 13: Solid Waste Management Situation

Land ownership	% Reporting dust bin in house	Disposal of waste from the waste bin in the house				
		On the street	In open ground	Settlement dustbin	Store for another day	Daily collection by sweeper
Private	78.6	8.7	1.9	58.3	6.8	24.3
Mill land	67.8	1.5	0.5	56.8	13.1	28.1
Public	72.6	1.5	1.5	66.7	7.4	23.0
Average	71.9	3.2	1.1	60.2	9.8	25.6

In case of these particular slums, average 72 per cent households have dustbins in their dwellings, rest 28 per cent do not have even dustbin in their houses (Table 13). Though around 79 per cent households living on the private lands have a dustbin in the house, which is higher than the other categories but at the same time 8.7 per cent households dispose the garbage on the streets from the home dustbin. Around 25 per cent households in all the slums give the garbage directly to the sweepers who come to the settlement every day while 60 per cent dwellings dispose the waste in the settlement dustbin from where the municipal corporation collects it almost daily.

Table 14: Agency and Frequency of Slum Cleaning

Land ownership	Authority keeping the slum clean				Frequency of cleaning the slum			
	Residents	CBO	AMC	Other	daily	two times a week	weekly	irregularly
Private	5.8	2.9	90.3	1.0	85.4	8.7	1.9	3.9
Mill land	4.0	0.0	96.0	0.0	82.9	16.6	0.0	0.5
Public	6.7	0.7	91.9	0.7	88.9	11.1	0.0	0.0
Average	5.3	0.9	93.4	0.5	85.4	13.0	0.5	1.1

AMC has a residential-waste collection system which is called door-to-door solid waste collection is managed by its department. The main functions of this department is door to door waste collection, street sweeping, cleaning of public toilets and latrines, cleaning of open defecation and spraying of insecticides, transportations of collected waste from above sites to the specified waste storage container sites through containerised handcart and transportation of dead bodies of small animals like dogs, cats, pigs etc. to the specified site. Around 5 per cent households have reported that the residents of the settlement themselves clean up the settlement while 93 per cent reported that this work is done by the municipal corporation (Table 14). In slums on private lands, slums 2.9 per cent households responded

that the Community Based Organisation (CBO) keeps the settlement clean. In fact during SNP implementation in Sanjaynagar, a CBO of women was formed check on material and construction. The same CBO is now managing the door-to-door solid waste collection in Sanjaynagar and the surrounding slums. At the time of our survey the AMC paid salaries to these sweepers with CBO only supervising the work.

The door-to-door garbage collection is a daily service in the city and so in the slums surveyed where 85.4 per cent households reported daily waste collection. Just 4 per cent respondents of the private land slums were of the opinion that there is no regular cleaning up in the settlement. Thus, with regards to this service also, there was not much of difference across the slums.

Table 15: Electricity Connection

Land ownership	% having electricity in house	% having electricity meters
Private	96.1	93.2
Mill land	95.5	91.0
Public	87.4	84.4
Average	93.1	89.5

Though slum electrification programme has provided a large number of slum dwellings with electricity in Ahmedabad City, around 12 per cent of the households do not have electricity in the slum on public land (Table 15). In the slums on private lands, just 4 per cent households did not have any electricity connection. While 90 per cent households (among those having a connection) had legal electricity connection, 10 per cent had taken illegal connection, which is quite low. The Ahmedabad Electricity Company (AEC), now owned by a private sector company named Torrent Power, had introduced a scheme in the slums to give the units a legal connection at a very low one time connection charges and also minimum monthly rent slab. Thus, extent of illegality of electricity connections in the slums is very low. Interestingly, while the land is illegal, households have legal electricity connection, indicating that if the supplier intends to give legal connections in the slums, the households living in such settlements get some form of legal identity. Some have argued that penetration of electricity to the slum household was possible because Torrent is a private company interested in expanding its customer base and that if that was a public sector company, such expansion may not have been feasible. This facetious argument only shows that the local state is not welfare state!

Table 16: Settlement Crowding

Land ownership	% hhs having open space in front or back or both
Private	20.4
Mill land	27.6
Public	48.1
Average	32.3

Crowding in a settlement can be gauged from whether there is open space in the front and back of the slum dwellings. The slums on the private lands had only 20 per cent households reporting an open space in the front and the back of the dwelling units (Table 16). In fact, when we visited these private slums we could see that the land sub-divider had sold-off every piece of land keeping only narrow roads inside for movement. The squatters on the public land had large spaces in front and the back as there was no planned subdivision and development on this land. Even the settlement on the mill land, because it was laid out by the mill owner, has optimally utilised the land. Thus, there is higher extent of crowding in the slums on the private lands as compared to the slums on public lands.

5.0 Education Levels

The educational achievements of the slum dwellers are strongly related to the land ownership situation. This is because the land ownership determines tenure status. Interestingly, both, male and female literary rates are the highest among the slums on the private lands, the literacy rates being 73.9 per cent and 62.0 per cent respectively (Table 17). The literacy rates are the lowest in Talavadina chhapra; the male and female rates being 57.3 per cent and 41.1 per cent respectively. The average male and female literacy rates of all the slums together as well as of the slums on private lands are lower than that of Ahmedabad city (in 2001), which were is 87.8 per cent for males and 71 per cent for female. In our FGDs, we found that the households are presently interested in sending their children, including girl children, to school and hence we expect that the literacy rates in these slums will improve. The households living in the slums on private lands feel more settled and hence their literacy rates are higher than the households living in the slum on public land and who are under continuous threat of eviction.

Table 17: Literacy Rate

Land ownership	Literacy Rate	
	Male	Female
Private	73.9	62.0
Mill land	69.4	58.6
Public	57.3	41.1
Average	66.5	53.6

Poor endowments are a significant reason for households to continue in poverty. One of the important endowments that can pull out the households from the poverty is literacy and education. And lack of this endowment would increase their vulnerability to labour market risks and rapidly changing economies and also to various other risks. But only literacy (person who can read and write) is not a sufficient tool to measure educational endowment. The level of education is more important for a productive labour force.

Table 18: Education Levels

Land	Male
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ownership	just read	Up to 7	Up to 10	Up to 12	graduate	post-graduate	Other courses
Private	14.9	21.0	29.3	9.9	7.2	1.7	16.0
Mill land	25.9	33.1	18.7	7.7	2.9	1.1	10.7
Public	28.9	41.2	15.2	3.8	2.8	0.0	8.1
Average	24.1	32.5	20.2	7.2	3.9	0.9	11.2
	Female						
Private	19.0	26.1	26.8	5.6	3.5	0.0	19.0
Mill land	32.2	34.1	19.4	3.3	2.6	0.0	8.4
Public	33.6	38.6	17.9	2.1	2.9	0.7	4.3
Average	29.2	33.2	20.9	3.6	2.9	0.2	10.1

Out of 57.3 percent literate males in Talavadina chhapra, around 29 per cent can only read and 41 per cent have only primary education. Only 2.8 percent males i.e. 6 persons are graduates while there are no post graduate males in this slum (Table 18). While in the slums on private lands 30 per cent of literate males have secondary education and around 10 per cent literate males have studied till higher secondary. Further, 7.2 per cent males are graduates, which is significantly higher than the proportion for the other two categories of slums. In Talavadina chhapra (on public land), just 3.8 per cent males have studied up to class 12. In this slum, about 70 per cent males can just read or write or have studied up to class 7, which is not very useful for getting high employment opportunities.

Unfortunate part of Indian education system is educated unemployment. Many people prefer to take a job oriented diploma or certificate course in computers, accounting, graphic designing, mechanical training, electrical training, plumbing etc. Even that proportion is higher in the private land category. In contrast, in the slum on the public land, Talavadina chhapra, just 8 per cent of the males have undergone any vocational training course. This indicates that in this slum, most males would be employed as unskilled labour.

Similar situation can be observed with regards to the education level among the women. First, the percentage of those able to just read is higher among women (29 per cent) as compared to the males in the surveyed population. On the whole, there is a higher proportion among females than among the males who have studied up to class 7. On the whole only 33 per cent have studied up to class 7 among the females, making in all 63 per cent with ability to either just read or with low level of education. But, like in case of males, the educational achievements among the females are worst in the slum on the public land (Talavadina chhapra) as compared to the slums on private lands. Out of 41 per cent females who are literate, around 72 per cent in Talavadina chhapra (public land) have only primary education. In fact in all the slums, a large number of literate women can just read or have studied up to 7th grade. But this proportion is slightly low in the four slums on privately owned lands. Further, we find that 5.6 per cent females in slums on private land have studied up to class 12, this percentage for the slums on public land being 2.1; and 3.5 per cent have become college graduates in the former when this proportion is 2.9 per cent in the latter.

A small number of women in the slums have studied after school. In a conservative Indian society it is uncommon for a woman to continue studies after marriage. It is still more important for a girl child to learn cooking and home management than formal education in many of the communities. Women are not allowed to go out to earn extra income even in many of the slum communities. We found this practice among the communities in Amraiwadi slums. But because of lack of financial resources they are always in search of home based work. Another reason is of course the threat of eve teasing. One striking fact is that in the slums where tenure security is high, 19 per cent women have done other courses but other courses here are not like the males have done. Women generally go for courses like sewing, knitting, embroidery, handicrafts, *mehendi*² etc with which they get some petty jobs to be done at home. During the FGDs it was found that some of the girls have also joined courses like nursing and computers which have proved quite productive for them. Though dropout rate has not been measured here one can observe that a large number of students have dropped out from the schools after the age of 14 which is 7th grade. In all, even among females, like in case of males, the slum households on private lands, which have consolidated in the urban system on account of high perceived security of tenure, have achieved higher education level as well as higher literacy rate than the slum households on public land.

6.0 Health Facilities Utilisation

Generally a poor family would prefer a health facility being located either very near or inexpensively available. It has also been observed in general that the poor households prefer government facility in case of major illnesses and private as well as government facility in case of minor illnesses. Further, for minor illnesses, a health facility nearby is preferred whereas for major illnesses, the household is willing to travel long distances. National surveys also show that the poorer a household, lower is its ability to get treatment in a public facility for major illnesses and conversely, the better economic status, better are the chances of getting admitted to a government hospital for the treatment of major illness.

The AMC has set up Urban Health Centres (UHC) in each ward of the city in which treatment for minor illnesses can be obtained. Hence, the slum population have access to government facility nearby for minor illnesses. Lower the income, the higher is the dependence on government facilities for minor illnesses. As argued earlier, the slums on the private lands have higher tenure security and have consolidated their living in the city. This might be the cause of higher incomes of the households living in these slums. This has resulted in two in every five household using private health facilities for minor illness treatment in these slums and the rest going to public facilities (Table 19). For the slum on the public land, only one third household went to private facility for the treatment of minor illnesses and the rest went to the government facility (mainly the UHC).

For the major illness, 87 per cent of the surveyed population went to a public hospital farther away than the UHC. On an average, the households travelled about 3-4 km to get treated for major illnesses. The UHC was within one km distance of the surveyed slums and there was only one such government facility in the neighbourhood. About 13 per cent of the households in the slum on public land, Talavadina chhapra residents went to private hospital for a major illness while this percentage for the households living on private land is only 10 per cent. Thus, utilisation of public facility is higher for households having more secure tenure than the households with no tenure security.

Table 19: Utilisation of Health Facilities

Land Ownership	Health facility used		
	Government	Private	Trust
	For Minor illness		
Private	59.2	40.8	0.0
Mill land	65.3	34.7	0.0
Public	66.7	33.3	0.0
Average	64.3	35.7	0.0
	For Major illness		
Private	90.3	9.7	0.0
Mill land	86.4	13.6	0.0
Public	85.9	13.3	0.7
Average	87.2	12.6	0.2

For maternity care also slum dwellers prefer government services which are available within a short distance, averaging 3 km. About 80 per cent of the households used government facilities for child-birth, just 20 per cent went to private hospitals for the purpose (Table 20). However, in the slums on private lands, utilisation of private facilities is higher at 28.2 per cent whereas in the slum on public land this proportion is 18.5 per cent. The reason is the same; households on private lands have higher incomes than the latter and hence prefer to go to a private doctor for delivery. Many women during FGDs said that they would like to go to their respective villages for delivery of their child. When they were asked about the reliability of services available in the village, they replied they preferred the traditional system of delivery by midwives. The women did not wish male doctor-assisted delivery and hence they preferred a midwife to a trained doctor.

Around 75 per cent households replied positively about immunising their children (Table 20). This means that 25 per cent were still not immunising their children. Proportion of children receiving immunisation was higher in the slum on the public land (83 per cent) as compared to the slums on the private land (60 per cent). We do not know why this is the situation, although there are NGOs working in the latter category of slums. Government has undertaken campaigns to eradicate polio, tuberculosis and other such diseases with vaccination. Vaccination is freely and frequently administered but still the data shows that it is not 100 percent in the slums.

Table 20: Maternal and Child Health Care

Land Ownership	Health facility used for deliveries		% reporting immunization of children
	Government	Private	
Private	71.8	28.2	60.2
Mill land	88.7	11.3	81.4
Public	81.5	18.5	83.0
Average	80.7	19.3	74.9

While asked about the types of diseases, the most common answer was malaria, typhoid and Chikungunia³. All these disease are due to mosquitoes or polluted drinking water. In the year 2006 when there was an epidemic of Chikungunia in the city, many of these slum dwellers were affected and missed their employment and schools for days. As we see later, majority of the workers are in the category of casual labour and employment days lost results in lowering of incomes. When the children miss schools during such illness and are then unable to cover the syllabus they have missed out on, they fail and have to repeat the year. Other than such major illness, skin disease, viral infection and food poisoning are the frequent in these slums.

7.0 Employment, Income and Assets

On the whole, the Work Participation Rates (WPRs) are very low in the surveyed slums. On an average the male WPR was 32 per cent and the female WPR was 17 per cent (Table 21), which was far lower than the city's average WPR in 2001 but close to the WPRs of the bottom half of the urban population. There is a vicious cycle of poverty, low skills, low work availability and low income, resulting in low skills and low work availability. Further to low work availability, the quality of work available is also very poor. Two thirds of employed males and about four-fifths of the employed females are engaged as casual labour in the sample. Research has shown that there is high degree of poverty among those employed as casual labour as compared to those employed in regular salaried work. Hence, in general, one would expect high incidence of poverty in the slums in Amraiwadi. However, across the three categories of slums, there is some diversity.

To begin with, there is male female differential in WPRs as well as type of work engaged in. After casual labour, the next two important employment categories for the males are industrial labour (7.6 per cent) and private jobs (7.3 per cent). For the females the next two employment categories are personal services (6.3 per cent) and industrial labour (5.7 per cent). Women are not working in transport and business sectors and also not working as shop keepers and vendors whereas men are not engaged in home-based work. As already mentioned, women from many communities in this ward stated that they would not go out to work; in fact, it is not socially acceptable that they go out for work. Hence 2.3 per cent of the women workers worked from home.

When observed across the different categories of slums, we can observe that the male WPRs are highest in the slums on the private lands (35.9 per cent) and lowest in the slum on the public land (27.4 per cent). Female WPR is the highest in the last category of slum (on public land) and is 22 per cent followed by the slums on the private lands (16.6 per cent) and then slum on the mill land (13.5 per cent). It appears that the mill land slum, Satyamnagar is more traditional with women not going out to work. As we see, low female WPR in the slum on the mill land is not because of high income of males; in here the male WPR is just 33.3 per cent and 71 per cent of them are casual labour. Low male WPR in Talavadina chhapra, the slum on public land means that women have to come out to work and hence the female WPR is 22 per cent, the highest among the three categories of slums.

Table 21: Work Participation Rates and Employment Sectors*

Type of work	Land ownership			
	Private	Mill land	Public	Average
	Male			
Work Participation Rate	35.9	33.3	27.4	32.0
Casual labour	58.0	71.1	67.3	66.9
Industrial labour	5.7	12.2	1.0	7.6
Government service	0.0	0.0	1.0	0.3
Private job	10.2	7.8	4.0	7.3
Shop keeper	0.0	0.0	3.0	0.8
Construction	4.5	0.6	2.0	1.9
Transport	3.4	1.7	3.0	2.4
Vendor	0.0	1.7	4.0	1.9
Petty business	5.7	0.6	10.9	4.6
Personal service	12.5	4.4	4.0	6.2
	Female			
Work participation rate	16.6	13.5	22.0	17.0
Casual labour	81.6	65.1	88.0	78.4
Industrial labour	0.0	15.9	0.0	5.7
Home based work	7.9	1.6	0.0	2.3
Government service	0.0	1.6	0.0	0.6
Private job	5.3	4.8	0.0	2.8
Construction	0.0	3.2	6.7	4.0
Personal service	5.3	7.9	5.3	6.3

* These categories have been generated observing the data and have not been matched with census or NSS categories

Highest proportion of males employed in private job among the three categories of slums is in those on private land, 10.2 per cent of them employed in this category. In Talavadina chhapra, just 4 per cent males were employed by the private sector and in Satyamnagar, the slum on the mill land this proportion was 7.8 per cent. Among the females also, private sector jobs have been accessed by women in the slums on private lands (5.3 per cent) and the women living in Satyamnagar (4.8 per cent). A job in private sector means the worker has to have some skills and some education level, which is quite low in Talavadina chhapra.

Further, in Talavadina chhapra, while the male WPR is very low, two thirds of the employed males were working as casual labour. This is an indication of higher incidence of poverty among the dwellers of this slum. The impact has been relatively high female WPR. But, women too are predominantly engaged as casual labour. In this slum, women do not even work out of home. Probably, insecure tenure means that women do not invest in home-based work. Further, besides casual work, 6.7 per cent women were working in the construction sector and another 5.3 per cent in personal services. There was very little diversity of work opportunities available for women in this slum. A surprise element is that 10.9 per cent of men in this slum have their own petty business. In our field visit, we could observe that there were two predominant businesses here; metal waste collection and sale and brewing of cheap liquor. In short, this slum with insecure tenure has relatively higher incidence of poverty as compared to other slums surveyed.

Satyamnagar, a slum on the mill land, has low female WPR, as already discussed above, but also has the highest proportion employed as industrial workers among the three categories of slums. On the whole 7.6 per cent employed males were in industries, but in Satyamnagar this figure was 12 per cent. Female employment in the industries was observed only in this slum.

Personal service category includes teachers, plumbers, electricians, mechanics etc. In slums on private lands where 19 per cent males have taken certificate courses or diploma, 12.5 per cent males are engaged in professions related to such courses. Among women, the personal services meant such jobs done by men as well as working in the houses as household help.

In Sanjaynagar, which is on a private land, we saw women engaged in making *aggarbattis* at home as well as in a small unit operating out of the slum. Thus, in slums on private land, 7.9 per cent of the working women worked from home. Also, higher order of tenure security means that home-based work is possible as there is no fear of eviction. Lastly, there is miniscule proportion of workers employed in government services, primarily on account of low literacy levels and low educational levels.

The employment available to the urban poor is of very poor quality. This is true for workers in India and also workers in our research in Amraiwadi. They either work as casual labour or are self employed where the salary/income is irregular. On the whole only one in six workers had any regular income, the rest were either daily wagers, self-employed or had irregular work (which meant that they do not have work for part of the year.) A quarter of the employed males had regular income in the slums on the private lands, on account of the type of employment they had. Similarly, because a significant proportion of males in the slum on mill land were working in industries, one in every five employed males in this slum also had regular income. This proportion in the slum on public land was only 4 per cent. Most of the males who are self employed are vegetable vendors, auto or bus driver or have seasonal work.

The women largely had irregular work, which nearly 98 per cent of those employed in Talavadina chhapra revealed. Even in the slums on private lands, women's employment was irregular; for four in five employed women and another one in six employed worked is self-employed. Only in the slum on the mill land, where women were working in industries we find that about a quarter of them had regular income.

We found in our discussions with the people that those self employed did not engage in the same type of work/ trade round the year. They might be engaged in different odd jobs as per different seasons of the year. For example, those engaged in petty trade might be selling vegetables for large part of the year but might also be selling kites in the kite season, make and sell idols before the festival of navratri⁴, or fire crackers before Diwali. These casual labourers are also there in construction market to do the most basic work like filtering the sand and lifting the bricks and buckets of cement on their heads. In short, the self employment and irregular income category includes much diverse type of activities and trades and most urban poor engaged in them would vary depending on the market requirements. These workers are always vulnerable to ever changing technology which suddenly makes them redundant.

The type of employment in the slums covered in our study indicates a situation of poverty. Casual labour employment is very strongly related to poverty (Dubey and Mahadevia 2001). The incomes from such activities are not enough to invest in housing. Also, irregularity of income would mean inability to get a housing loan or plan for long term investments in productive assets. Imparting of skills along with assistance in job placement on one hand and shelter security on the other so that the households could consolidate and move on, is necessary to pull these households out of poverty.

The average monthly income of all the slums in this ward is very low, just Rs. 3,248 for a household and Rs. 650 per capita. The average incomes of the households are on the poverty line. In 2004-05, the urban poverty line for Gujarat was Rs. 659.18 per capita (Planning Commission 2009), and a monthly income of Rs. 650 per capita is lower than the 2004-05 poverty line. The primary survey was carried out in 2009 and the poverty line value would have gone up since 2004-05, indicating that an average slum household in the surveyed slum is below the official poverty line.

Table 22: Household and Per Capita Income (Rs.), Amraiwadi, Ahmedabad

Land Ownership	Average Monthly Income (Rs.)	
	Household	Per Capita
Private	3,654	794
Mill land	3,031	594
Public	3,058	577
Average	3,248	650

But, the situation across all the slums is not so bad. The average per capita income in the slums on private lands is above poverty line, at Rs. 794, whereas in the slum on the mill land and slum on public land the per capita incomes are much below the poverty line, at Rs. 594 and Rs. 577 respectively. Thus, only in slums on private lands, where a quarter of the working males have regular income and there are jobs available in the private sector, households have come out of poverty. However, the households are just above the poverty line and the current high rate of inflation could well push these households below the poverty line. The slums on private lands have improved their life and income because they have been left to themselves; they have not faced demolitions and hence have high perceived security of tenure. Their life improvement is incremental and the state policy should assist such processes, something which we have not seen in the recent years.

Table 23: Distribution of Expenditure, Amraiwadi, Ahmedabad

Expenditure item	Private	Mill	Public
Food	32.6	21.8	47.7
Cooking fuel	6.2	7.0	5.7
Clothes	2.3	2.7	1.6
Consumer durables	1.7	5.4	2.5
Education	1.4	2.4	0.2
Health	5.6	12.5	11.5
Recreation & entertainment	0.8	0.0	0.5
Communications	3.1	6.8	4.8
Housing	16.2	15.4	1.7
Basic Service charges	2.1	0.7	0.0
Electricity	7.7	7.4	7.7
Transport	4.3	8.6	3.9
Debt repayment	0.0	4.4	8.7
Insurance premium	15.5	4.2	3.1
Taxes	0.6	0.6	0.4
Total	100.0	100.0	100.0

Note: Expenditure on some items was reported for one year, which has been converted into per month for the table.

Expenditure patterns vary by slum category. At Talavadina chhapra, the slum on the public land, their very low income has meant that 48 per cent of their expenditure is on food items and another 6 per cent is on cooking fuel (Table 23). Poor basic services in the slum seem to have influenced health status and the households are spending about 11.5 per cent of their total expenditure on health. This leaves very little to spend for education and hence only 0.2 per cent is allocated for education. They are spending 8.7 per cent of the total expenditure on debt repayment, possibly on borrowings from the money lenders. However, many women in this slum are also members of SEWA Bank and are paying instalments to the Bank for some of the borrowings for consumption expenditure. These households are not paying anything for basic services in the settlement firstly because the services are inadequate and are by the AMC. Since, these are squatters, their expenditure on housing is also low, just 1.7 per cent of their total expenditure. Even though their incomes are below the poverty line, the households expend about 4 per cent of their total expenditure on transport, mainly for work purpose. The

private electricity company, Torrent Power, has extended individual connections to most slums in Ahmedabad irrespective of its legal status, households are expending for the purpose and in Talavadina chhapra, are spending 7.7 per cent of the total expenditure on electricity. There is a case for formalizing tenure so that the households start investing in housing and improve their living conditions which would result in reducing their health expenditure.

Category 1 slums, that is those on the private lands allot about a third of their total expenditure on food and another 6.2 per cent on cooking fuel. Their expenditure on housing is the highest among all the three categories of slums, 16.2 per cent as compared 15.4 per cent in the slum on the mill land. In the mill land slum, housing expenditure is on rent whereas in the private land slums, housing expenditure is on instalment for housing loan repayment. These households have also taken insurance and are spending about 15.5 per cent of the total expenditure towards premium. They are also spending 2.1 per cent, highest proportion among all the three categories, on basic services as various charges for different services, which the slums in the other two categories are not paying as much or not at all. An outcome of relatively better basic service levels and housing conditions, their health expenditure is the lowest in terms of proportion of the three categories of slums.

A fact to note is that all the slum households pay some amount as taxes to the local government. In essence, the tax is property tax and the proportion of the total expenditure on this item is 0.6 per cent for the slums on private land and mill land and 0.4 per cent for the slum on public land. Possibly, a section of dwellers of Talavadina chhapra are not paying any property tax as they are not receiving property tax bills from the AMC.

Improvement in perceived security of tenure means increased investment in assets. Almost all households have some assets (Table 24). But, the households living on the private lands have more assets than the households in other two categories of slums. For example, while 72.8 per cent households on private lands have a television (TV), only 55.6 per cent of households on public land own this asset. Twenty per cent households do not have a fan and 13 per cent households do not have a light fixture in the slum on public land; this proportion in the other two categories of slums is just 4 per cent. About half the households on the private lands have a cooking gas that in the slum on public land is only 9 per cent. This means that the women living in the latter slum use *chulha* (hearth) for the purpose of cooking which is harmful to health and environment.

Table 24: Asset Ownership, Amraiwadi, Ahmedabad

Land ownership	% Households having following assets										
	TV	Fridge	Radio	CD Player	Mobile phone	Landline phone	Cycle	Scooter	Cooking gas	Fan	Light
Private	72.8	1.9	10.7	13.6	42.7	1.0	61.2	15.5	48.5	96.1	96.1
Mill land	68.8	1.5	3.5	6.0	40.2	0.5	60.3	7.0	33.2	95.5	96.0
Public	55.6	3.0	7.4	9.6	30.4	0.7	35.6	4.4	8.9	80.0	87.4
Average	65.7	2.1	6.4	8.9	37.8	0.7	52.9	8.2	29.3	90.8	93.4

8.0 Urban Citizenship

The poor are generally unaware of the amenities available to them from the government and sometimes even if they know, the process of getting various facilities is very tedious and time consuming on account of the paper work required. Getting facilities or their entitlements such as a ration card, either a general card or a Below Poverty Line (BPL) card may also mean paying the local government officials. Only 14 per cent households reported that they had a ration card (Table 24). The possibility of holding a ration card increases with secure tenure and higher income, as we see with regards to households on private lands where 17 per cent households hold a ration card. But, although, as discussed above, the households living on mill land and public land have incomes lower than the official poverty line income, only 1.5 per cent households in these two categories of settlements had access to BPL Card. How would these households have any entitlement to any subsidised government scheme or facility? Such statistics about holding of BPL card justifies the argument for universalisation of basic entitlements such as food, education and health. The targeted approach in the political economies we presently have, would not work.

Table 24: Possession of Documents of Entitlements

Land ownership	% having ration card	% having BPL card	% having election card
Private	17.09	0.84	18.57
Mill land	13.42	1.29	16.50
Public	11.28	1.27	15.80
Average	13.93	1.14	16.95

One expected that all the households would at least have an election card. But, just 17 per cent households stated that they had this card, even though the municipal councillors are keen to ensure that all households possess these cards so that they could be mobilised for voting during each election. When some widows were asked whether they received the widow pension or not they replied that they do not know whether they were eligible to get that or not and even if they are eligible it is not possible for them to go to municipal office (which is very far away) and do the paper work as they do not know how to read and write. The slums where NGOs are active, there is obviously more awareness about the policies for the urban poor and the slum dwellers take their help to access such facilities.

During FGDs it was also inquired whether they know various development programmes of the city, state and central government for the urban poor. Only negligible number of respondents, who were associated with NGOs, knew about some of the programmes. We also discussed with them about how they had coped during the two recent major calamities; one the 2001 earthquake and other 2002 communal violence. They said that earthquake did not affect them much but the communal violence had destabilised their lives. They did not

receive any help from the government. They had lost many man-days during the violence period but could not do anything but ride out the problem.

9.0 Planning Needs

Many a times the policy makers completely miss the link between livelihoods of the urban poor and transport. Access to affordable transport is one of the most important factors in determining livelihoods for the urban poor. Further, they often prefer to stay in the congested dwellings without any security so that they can walk to their workplace rather than move to distant locations for secure housing. In Amraiwadi also 70 per cent of the head of the households walk or cycle to work (Table 25). Hence, for 73 per cent of them, their work place was within 4 km distance from their residence.

Table 25: Travel Distance and Mode for Main Household Earner, Amraiwadi, Ahmedabad

Land ownership	Distance to work (km)			Mode used						
	0 to 4	4 to 8	More than 8	Walk	Bicycle	Bus	Scooter	Auto-rickshaw	Shuttle auto	Other
Private	50.0	42.1	7.9	14.5	47.0	21.7	8.4	3.6	1.2	3.6
Mill land	80.6	11.9	7.5	22.5	56.7	4.2	8.3	0.8	0.8	6.7
Public	87.8	12.2	0.0	40.4	29.8	5.3	1.8	8.8	0.0	14.0
Average	72.8	22.1	5.1	25.8	44.5	10.4	6.2	4.4	0.7	8.1

There is however some variation in the travel pattern among three types of slums. The main earners of the slums on private land travelled longer distance than the main earners of other two categories of slums; only half of them worked within 4 km distance and 42 per cent travelled 4 to 8 km for work (Table 25). This means that they cannot walk to work. 47 per cent of them bicycled and 22 per cent used the public bus. Only 8.4 per cent used personal motorised transport in this category of slums. So, even though households in this category of slums are relatively better-off, 62 per cent of them use non-motorised transport means, either walking or bicycling.

In contrast, 40 per cent of the main earners in slum on public land, Talavadina chhapra, walked to work and another 30 per cent bicycled. Thus, 70 per cent of the main earners in this settlement used non-motorised transport. Due to low income and hence low affordability, only 5.3 per cent took bus. But, as high as 14 per cent took other transport means, which are called *chhakada* (a six seater), which is a paratransit mode, meant to sit six people but in fact more people are crammed in. These charge the same rate as the public bus. This six seater paratransit is a very unsafe mode to travel and has reported many accidents but the poor do not have choice because of very bad routing and poor timings of public buses. About 80 per cent of the main earners in the mill land slum walked or bicycled to work and 8.3 per cent used their private motorised transport mode to work. For these workers dependence on other mode of transport is also high (6.7 per cent reporting using it) and dependence on public bus

is low (4.2 per cent reporting using it). Lastly, in the second and third category of slums, work location of 80 per cent of the main earners is within 4 km distance, and hence they walked to work.

The second earner of the household is generally from among the women. Their location of work as well as travel modes is not very different from that of the main earners, who are generally men. They reported that they walked to work or took shuttle (shared) auto-rickshaw or the six seater. Sometimes they had to take an auto-rickshaw to reach on time. A similar pattern can be seen except in the slum on the public land. About 44 per cent of them even bicycled (Table 26). But women do not drive a scooter and hence do not have option of using a personal motorised transport. The only difference can be seen in the slums on private lands where 62 per cent of the second earner worked within 4 km distance while this figure for the main earner was 50 per cent. During our FGDs the women were complaining that after walking or cycling for average 6 to 8 kilometres a day in the heat and so much of physical labour at the work, it was very difficult for them to do the household work. Adding to that fatigue, malnourishment also adversely affected their health.

Table 26: Travel Distance and Mode for Second Household Earner, Amraiwadi, Ahmedabad

Land ownership	Distance to work (km)			Mode used						
	0 to 4	4 to 8	More than 8	Walk	Bicycle	Bus	Scooter	Auto-rickshaw	Shuttle auto	Other
Private	61.5	38.5	0.0	46.2	30.8	23.1	0.0	0.0	0.0	0.0
Mill land	81.3	12.5	6.3	30.0	60.0	5.0	0.0	0.0	5.0	0.0
Public	71.4	28.6	0.0	20.0	40.0	10.0	0.0	10.0	10.0	10.0
Average	71.4	26.5	2.1	32.1	43.6	12.7	0.0	3.3	5.0	3.3

Table 27: Travel Distance and Mode for School Children, Amraiwadi, Ahmedabad

Land ownership	Distance to school (km)			Mode used						
	0 to 2	2 to 4	More than 4	Walk	Bicycle	Bus	Scooter	Auto-rickshaw	Shuttle auto	Other
Private	63.6	27.3	9.1	65.4	7.7	3.8	3.8	15.4	0.0	3.8
Mill land	62.5	37.5	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
Public	28.6	71.4	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
Average	51.6	45.4	3.0	88.5	2.6	1.3	1.3	5.1	0.0	1.3

Most of the children go to school which is at distance of 2 kilometres except in category 3 slum (Talavadina chhapra), where secondary school is not available nearby, 71 per cent children travel 2 to 4 km for school (Table 27). In category 1 slums, households who can afford a little more in fees than what the municipal schools charge, send their children to private schools which are at a distance of more than 4 kilometres and hence in these slums 8 per cent children bicycle and about 15 per cent of them go by auto-rickshaw, which functions like a school-bus in absence of a school bus for most schools in Ahmedabad. Otherwise, 88 per cent children walk to school on an average and in the slums in category 2 and 3, that is mill land slum and public land slum, all children walk to school.

The route of the Bus Rapid Transit System does not service this particular ward, Amraiwadi and so even after laying such a huge public transport system in the city these people of Amraiwadi do not benefit from it.

This analysis shows that the schools have to be in neighbourhood for the children to walk to. But, the schools have to be of good quality so that the parents are not tempted to send the children to better schools far away. As it is, families are spending a significant proportion of their total expenditure on transport and a lack of good school nearby and lack of affordable public transport would increase the household's burden on transport expenses. Urban planning in general should be conscious of this work-home relationship and should also be planning new transport systems to pass by the residential areas of the urban poor. Work place can be near the homes if the residential areas of the poor in the city are well spread across the city and are interspersed with high income neighbourhoods. Land markets do not allow that and in the neo-liberal policy regime times even planners appear to have abandoned the idea of interventions in land markets.

Lastly, another important area of planning is to improve the shelter security. And we asked the households about their preferences with regards to housing. More than 80 per cent of the household reported that they want tenure regularisation in their current slum (Table 28). They wanted the land on their name or the name of the slum (titles in their name or slum's name) or wanted long-term lease rights. They did not want to move anywhere else. Only 14 per cent stated that they wanted to move to another location. In fact, they mentioned that they wanted to shift to a better location, but, in the same ward or nearby wards of Khokhara and Rakhial as they did not want to move far from their current work locations. About 5 per cent stated that they want redevelop the slum on the same site. This could also be redevelopment into apartment type buildings. We did not find much variation in aspirations with regards to housing across the slums.

Table 28: Housing Preferences, Amraiwadi, Ahmedabad

Land Ownership	Housing option preferred		
	Redevelop this settlement & stay here	Move to a new better place	Want land tenure regularisation
Private	8.0	12.9	79.1
Mill land	3.8	14.9	81.3
Public	4.0	14.0	82.1
Average	5.3	13.9	80.8

10. Micro Finance and Urban Poor – Understanding the Impact⁵

The success in rural areas in providing services such as facilities to deposit savings and access to credit for production, consumption, and emergencies is well known, but these financial services have yet to be sufficiently offered in the urban region. In spite of the large network of bank branches in cities, many of the poor find their financial needs largely unmet. Reasons such as lengthy paperwork and demand for security for opening an account, explain

why the urban poor feel compelled to rely on informal credit from moneylenders. This particular section seeks to study whether providing urban micro financial services could be an effective tool for improving the lives of the urban poor. The sample is drawn from the clients of SEWA (Self Employed Women’s Association) Bank in this ward⁶. A total of 150 households were selected as a sample from three slums; Talavadina chhapra (slum covered in sample above) on the AMC land, Bhikhadevano vado, which is located on partially AMC and partially private land and Mathur Masterni chali, which is located on private land formerly notified for acquisition under the ULCRA, 1976 but developed as informal settlement. Talavadina chhapra and Bhikhadevano vando have SEWA clients but Mathur Masterni chali does not have any household with a SEWA Bank client.

Preliminary studies included an understanding of SEWA bank and its financial products. After which, discussions with staff of SEWA Bank, MHT and Friends of Women’s World Banking (FWWB) helped in understanding the existing scenario of microfinance in Ahmedabad. SEWA Bank’s data on number of members using different products in various wards and slums, helped in initial slum selection. Various field visits were made to these potential slums wherein the clients of SEWA Bank were interviewed and an attempt was made to understand their involvement with SEWA Bank and their utilisation of its financial products. Slums were identified from various preliminary study results, discussion with staff members in SEWA Bank and from field visits. Through SEWA Bank’s list of borrowers and savers, it was identified that 25 per cent of SEWA Bank clients were from Amraiwadi ward. Therefore this ward was selected for this micro-research and also for the entire project research work.

Table 29: Sample Description, Micro-finance and Tenure, Amraiwadi, Ahmedabad

Group	No. of sample Households	Sample Population	Sex ratio	HH size
Clients	70	373	943	5.3
Control Group 1	50	241	913	4.8
Control Group 2	30	139	904	4.6
Total/Average	150	753	920	4.9

The study covered three groups having similar socio-economic characteristics. One group consisted of micro finance clients, but with insecure tenure⁷. This is called Client group in this section. Two other groups consist of non-clients of SEWA and hence, act as a control groups. In the latter, there are two groups, Control group – 1 is of the non-clients in the same slum as that of the clients, and Control Group – 2 is of non-clients from the slum on private land, which does not have any microfinance beneficiaries but has high perceived security of tenure. The sample distribution is given in Table 29.

The client group has the highest sex ratio but also highest household size among the surveyed household. The household size in this sample and the sample in the previous sections match, but the sex ratio does not. As seen in the previous sections, Talavadina chhapra has the

poorest of all the surveyed households explaining highest household size in both the surveys. It seems that sex ratio is also higher because the poor households do not discriminate on the basis of gender as women are important contributors to the household income. The client group 2 has the lowest household size and also has the lowest sex ratio, a sign of highest incomes within the entire sample. Why the client group 2, which is a slum on the private land, has high income as explained in the previous sections. To recall; such slums have been left to their own devices and the households have gradually improved their incomes and living conditions over time and consequently, have higher incomes than the households living on the local government lands under constant threat of eviction.

Higher income in client group – 2 and relatively higher perceived security of tenure has resulted in highest male literacy rate (of 77.5 per cent) among the three surveyed groups (Table 30). But, female literacy is the highest in the client group (of 56.6 per cent) among the three groups. Being a member of a women’s organisation has positively influenced female literacy rate. But, the households in the slums where SEWA Bank is present but not having any single woman as SEWA Bank member (which is control group – 1) has the least male and female literacy rates of 61.3 per cent and 40.2 per cent respectively. One may also argue that only the households with a literate female could have become a client of SEWA Bank, giving us the results as in Table 30. It needs to be mentioned that we have not looked at the causal relationships; whether education has led to becoming a client of SEWA Bank or women’s agency being responsible for relatively higher literacy rate. But, both male and female literacy rates in the entire sample are lower than that of the city as a whole.

Table 30: Literacy Rates, Micro-finance and Tenure, Amraiwadi, Ahmedabad

Group	Literacy rate (per cent)		
	Male	Female	Total
Clients	74.9	56.6	66.3
Control Group 1	61.3	40.2	50.6
Control Group 2	77.5	55.2	68.1
Average	71.3	50.7	61.2

Table 31: Educational Achievements, Micro-finance and Tenure, Amraiwadi, Ahmedabad

Group	Primary incomplete	Primary complete	Secondary	Higher Secondary	Graduate	Post-graduate
Client	41.6	33.8	21.2	2.2	0.9	0.4
Control Group 1	42.2	45.1	11.8	1.0	0.0	0.0
Control Group 2	13.2	41.8	41.8	3.3	0.0	0.0
Average	35.6	38.2	23.3	2.1	0.5	0.2

Control group 2 has 45.1 per cent literates who have studied beyond primary schooling whereas in other two cases literates who have completed primary education and gone to study ahead are just 24.7 percent for clients and only 12.8 percent for control group 1. A very large proportion of literates in client group – 1 have not even completed primary education, followed by the client group where 41.6 per cent have not completed even primary education.

Hence, one can clearly see that control group - 2 is doing better than client group which is in turn doing better than control group 1.

Employment

Labour force participation rate (LFPR) is the highest for client group at 69.3 per cent, followed by control group 2 (66.4 per cent) and then the control group 1 (LFPR of 57.8 per cent). Female LFPR is the highest for the client group (at 51.6 per cent), followed by the control group 2 (at 38.3 per cent) and the least in control group 1 (at 22.4 per cent). In all three cases, male LFPR is more than 80 per cent. Once again, we see that the overall LFPR is highest among the client group (among the three groups), primarily on account of relatively high female LFPR, influence of women's agency as well as impact of membership of a micro finance institute (MFI).

Table 31: Nature of Work, Micro-finance and Tenure, Amraiwadi, Ahmedabad

Group	Self-employed	Salaried	Daily Wages
Clients	24	29	47
Control Group1	15	24	60
Control Group 2	4	34	62
Average	18	29	53

Box 1 – Case study of Ratanben Rathod

Ratanben Rameshbhai Rathod, 45 years old, and has a garbage selling business. She has 4 daughters and a son. Two of her daughters are married, one is studying and the fourth one stays at home. Her son is in 1st year of college. She helps her mother-in-law with garbage collection and sale and the family earns around Rs. 3,000 per month from this activity. Her husband is a cobbler and also hires vans and takes people on religious tour to Dwarka, Shirdi and other such places during the auspicious months. Ratanben said: "Because of Recession, very few people go on tour and hence business has reduced." He has earned in the past as much as Rs. 25,000 per month from tour services but now his earnings have reduced. Ratanben opened a savings account in SEWA Bank 14 years ago and has taken three loans so far. Her first loan for Rs. 5,000 was used for repairing her house; second loan of Rs. 10,000 was used for her daughter's wedding and her third loan of Rs. 40,000 was taken to act as a deposit for renting a luxury bus, with which her husband conducted tours. She added: "It is only because of SEWA Bank that getting Rs. 40,000 was easy; Madrasi (an informal money lender) would have charged a lot"⁸. Further, her savings at home and in SEWA bank helps her take care of her son's and daughter's education fees.

They have stopped borrowing from outside and are happy that SEWA Bank gives them easy installment loans, which are not difficult to repay. Apart from repairing their house, they have even bought a motorcycle and TV from their savings in SEWA.

Percentage of self employed is seen to be the highest in client group where 24 per cent population claim to be self employed (Table 31). Also, salaried and self employed workers account for 53 per cent of the workers among the client group. In contrast, percentage of daily wage workers is high for both the control groups at 60 per cent for control group 1 and 62 per cent for control group 2. Self employed constitute only 4 per cent in the latter group and 15 per cent in former. Self employment is seen to be high because of easy access to

business and housing loans in case of clients. For poor, home is not just a place to stay but also a place to work. SEWA bank has helped them buy certain tools for their enterprises or even assisted in creation of additional space for shops. This is well illustrated in case of 30 year old Ratanben Rathod. (See case of Ratanben Ramji Bhai Rathod, Box 1).

Table 32: Employment Areas, Micro-finance and Tenure, Amraiwadi, Ahmedabad

Slum	Shop	Construction labour	Textile worker	Agarbatti* making	Vendor	Diamond worker	Other casual labour ⁹
Clients	6.5	35.3	9.2	1.6	12.5	2.7	32.1
Control Group1	1.2	50.0	10.5	0	14.0	2.3	22.1
Control Group 2	2.7	43.8	13.7	0	1.4	0.0	38.4
Sample average	4.4	39.7	10.2	0.9	10.5	2.0	30.9

* Incense stick rolling.

The largest proportion of workers are in casual work and in construction labour, colloquially called *chhutak majoori* and is highest among the three groups in control group 1, which is the worst group in terms of income (Table 32). Further, vendors are in large proportion among clients and control group 1; 12.5 per cent and 14.0 per cent respectively and in control group 2, the largest proportion are in construction labour and other casual labour. In all, the employment situation of all the surveyed households is tenuous except those in the textile industries who have regular job.

Table 33: Household and Per Capita Income, Current and Before Recession, Amraiwadi, Ahmedabad

Group	Average household income (Rs.)		Per capita income (Rs.)		% reduction in income
	Before 6 months	Current	Before 6 months	Current	
Clients	5,807	4,992	1,096	942	14
Control Group 1	3,850	3,050	802	635	21
Control Group 2	4,487	4,000	975	870	11
Average	4,715	4,014	962	819	15

The total as well as per capita income among the client group is the highest among three groups, although the educational achievements and nature of work are the best among the control group 2. At the time of the survey, which was early 2009, the households were reeling under the impact of global recession and hence had reported decline in income. The research was also looking at whether access to MFI had any impact on these poor households. It was observed that there was 15 per cent decline in the household and per capita income from what these were six months ago (Table 32). The largest decline was observed among the households in control group 2 (of 21 per cent) and least among the households in control group 2. But, the latter's household and per capita income came in the second place among the three surveyed groups.

Further, income earned by women had a direct effect on family welfare. The average income earned per month by women in client households is Rs. 1,228, in control group 1 Rs. 1,140

and in control group 2 Rs. 915 per month. Anyway, the per capita incomes reported at the time of the survey were very close to the poverty line income for the control group 2. Thus, in the client group, women worked and their incomes were responsible for highest household incomes (among the three groups) at the time of the survey and even six months before the survey. In other words, women's income not just kept the households above the poverty line but also hedged the risk of falling into poverty at times of recession. We could say that these households benefited where women were members of an MFI. We can also interpret that incidence of women working in control group 2 could be less and also their incomes are low, although these households are stable and have been living in the settlement for long. It appears to us that cultural barriers could be responsible for women in control group 2 households for not participating in employment activities.

Box 2: Case of Naginaben Agrawal

Naginaben Agrawal is the 40 year old leader of Mahila Mandal (Women Association).

“SEWA has taught me how to save, earlier we would spend all the money on food and would be left with nothing end of the month”

She was born and brought up in Ahmedabad but both, her family and her husband's family, are originally from Rajasthan. She got associated with SEWA Bank six years ago. Her income from stitching is negligible and earns Rs 300 from supervising door to door garbage collection on behalf of SEWA. She comes from a family where women are not allowed to work, to go out alone or to decide anything on their own. SEWA has changed it all for her and for many like her in her *chawl*. After a lot of resistance from her husband, she managed to open an account in SEWA bank. So far she has taken three loans and all her loans have gone in consumption and old payments. The first loan was used to pay property tax for the house they live in. The second loan was used up to pay for SEWA Vimo for herself. The recent most loan of Rs 10,000 had to be taken because of the recession, which hit them hard. This loan was used to buy food, pay bills and for other household needs. Her husband, who is a fruit vendor, would earn Rs. 60/day but now because of recession, he sits at home without any work. They have four sons and this family of six lives in a 19 sqmt small room. At present, Naginaben has a pension scheme in her name. She also has SEWA insurance for self and husband at a fixed deposit of Rs. 3600 and for two sons at Rs 100/year. Recently, her son got operated for appendix and health insurance together with her savings at SEWA helped their family. She says, “If it were not for SEWA, I would have had to borrow from moneylenders at higher interest” and she also adds that recession has made it difficult for her to save. If the economic situation becomes better, she wants to extend her house for her son. However, she has pointed out few negatives. She says that SEWA needs guarantor for even a very small loan, which becomes difficult for them. She wanted to take a big loan and couldn't find a guarantor. “No one wants to take Guarantee for a big loan and if they do, they charge a lot”.

Though all clients have savings account in SEWA, very few have benefitted from insurance or pension schemes. Before recession 15.7 per cent invested in *Vimo* SEWA and 32.9 per cent invested in pension scheme of SEWA. A drastic change in number of savers can be seen due to recession. Now only 8.6 per cent and 21.4 per cent invest in *Vimo* SEWA and pension schemes. Also, only 64.3 per cent of the earlier 100 per cent managed to save in SEWA's various saving products. Other than SEWA, clients save at home and invest in LIC policies,

etc as shown in Table 34. Naginaben has benefitted from all three products (See box 2). Though her family income is meagre, SEWA has taught her to save and she feels very secure. But *mandi* (recession) has made it difficult to save lately she says.

Table 34: Saving Options, Micro-finance and Tenure, Amraiwadi, Ahmedabad

Client/non-client	Home		LIC policy		Savings group/ <i>Mandals</i>		Post office		Other banks		% households saving	
	Before	Now	Before	Now	Before	Now	Before	Now	Before	Now	Before	Now
Client	52.8	32.3	29.4	29.4	32.3	22.6	3.8	2.9	3.8	2.9	75.7	48.6
Control group 1	50.0	40.0	20.0	20.0	30.6	30.0	10.0	5.6	0.0	0.0	72.0	40.0
Control group 2	38.5	23.5	41.2	41.2	26.9	23.5	11.7	7.7	0.0	0.0	87.6	56.6
Average	48.7	32.4	18.3	18.3	26.1	29.6	5.2	7.0	1.7	1.4	76.7	47.3

Seventy six per cent of clients believe in saving even outside SEWA Bank. Most of the client population saves at home, in *Mandals* and also invests in LIC Policies. But recession has surely changed the saving pattern (see Table 34). Total percentage that saves in each group has changed.

Although, the control group 2 has the lowest incomes, 88 per cent of them saved before recession and 57 per cent saved after recession, which is the highest among the three groups. Further, being the most educated among the three groups, control group 2 households had reported highest proportion saving through a LIC Policy. This group was also conversant with saving in the post office and hence they had reported highest proportion among the three groups using this saving instrument. It appears that SEWA Bank's intervention has helped the client group in increasing women's income and hence household income and also inculcated saving habits (as compared to control group 1 which are the households in the same settlement as the client group), recession has affected these households badly and the incidence of savings had reduced in the client group. Some women also reported that the strict repayment norms of the Bank had resulted in them dropping out from the membership of the Bank.

Maximum households in each category have their own housing. Percentage of households who live in rental housing is largest for control group 1 which is 18 per cent otherwise in both client and control group 2, only 13 per cent live in rental housing. Also, more than 80 per cent houses in each group have used asbestos sheets for roofing purpose; 16.67 per cent in control group 2 has concrete roofing as compared to 4.29 per cent in client group and 2 per cent in control group 1. For flooring, use of stone, cement and tiles is seen in all three cases. As for walls, bricks have been used in almost all the sample houses except for very few houses of control group 1, where asbestos sheet, mud has been used for walls.

A major portion of the sample population claims that recession has changed their food habits. In case of control group 2, 100 percent of the population still eats twice a day whereas in

client, 92 per cent households eat twice daily and 7 per cent eats just once a day. This reduction in number of meals is due to less availability of work resulting in lower household income. Also, 10 per cent in control group 1 eats only once a day. Though highest percentage of households that claim to eat nutritious food¹⁰ is seen in clients, this percentage is still low at 14 per cent.

Table 35: Coping During Recession, Micro-finance and Tenure, Amraiwadi, Ahmedabad

Group	Percentage hosueholds				
	Stopped child's education	Used savings	Sold/ mortgaged assets	Borrowed money from outside at high interest	Others*
Client	0.0	15.5	20.7	13.8	3.4
Control group 1	3.0	21.2	3.0	30.3	0.0
Control group 2	0.0	14.3	0.0	14.3	0.0
Average	0.9	17.0	11.6	18.8	1.8

* Others is borrowing money from SEWA bank for consumption, reduced loan repayment

Control group 1 seems to be hit hardest by recession compared to the other two. Percentage of households who have claimed that they have stopped their children's education, used savings, borrowed money from outside with interest are more numerous in this group as compared to other two groups. Lesser percentage of client households have borrowed money from outside but a very high percentage confessed selling or mortgaging their assets. Also, when asked if they had put their children to work or switched to other jobs, the answer was negative in all cases.

It is evident from the findings that microfinance is beneficial, but in a limited way and security of tenure has emerged as an important factor for alleviating poverty. Secure tenure slum dwellers are seen to be less vulnerable because they do not have any perceived threat of eviction. Even though they do not have access to microfinance, they invest more on housing by borrowing from moneylenders at high interest rates. Further, they keep their surroundings clean because of the sense of ownership and hence, do not fall ill repeatedly. The literacy level was also seen to be high in case of secure tenure dwellers. These slum dwellers also have better food habits. Though not many are self employed in secure tenure control group, the impact of recession was seen to be the least. What stands out in insecure tenure microfinance beneficiaries (client group) is women's empowerment. Women are seen to be more confident and are involved in major household decisions. Also, they are seen to be engaged in various household income generating activities. This was almost absent in other groups. Though not many are self employed, SEWA has definitely helped them with easy access to loans. Also, as compared to control group with insecure tenure, beneficiaries have better housing conditions and also, spend much more on health and education. Beneficiaries seem to be better prepared for future because of easy access to cheap loans compared to the other two groups. Further, SEWA has inculcated the saving and investment habit in beneficiaries and they do so even outside SEWA. Only recently because of recession, it has become difficult for people to save. One important factor that emerges is that the recession

has adversely hit all households irrespective of their tenure status and their access to micro finance and that they are selling their assets or borrowing informally to tide over the situation caused by reduced incomes. The research strongly suggests a need for multipronged strategies for poverty alleviation. In other words, microfinance will work better in combination with other social security measures such as that of tenure security.

11.0 Tenure and Social Protection

The research hypothesis is: shelter security, determined through land tenure security leads to improvement in physical living conditions (in other words reduces deprivations in physical quality of life), improvement in capabilities on account of firstly improvement in literacy rates, then educational levels, and then empowerment to negotiate the administrative and political space with improvement in employment and incomes. It is not the other way round; incomes lead to improvement in education and then shelter security. It can be argued that education improvement could lead to empowerment and increase in incomes and consequently improvement in living conditions and shelter security. Our argument is that all other interventions of development such as improvement in access to education and health would amount to nil if there were no shelter security.

The variables that construct tenure security have been taken as independent variables and the social protection outcome variables have been selected as independent variables. There are 12 dependent variables defined for the logistic regression analysis. The independent variables are land ownership, house document (even the quasi legal), payment of property tax and indicators of urban citizenship such as ration card, BPL card and election card. The definition of variables is given below.

Independent Variables

Land ownership: Three categories of land ownership namely private land, public land and mill land have been observed in the study area. Two dummy values have been created: 1 for public lands and 0 for private and mill lands which are non public lands.

Property tax: This variable has been created using the question “*whether the household is paying property tax?*” If the household is paying property tax dummy value of 1 is assigned and dummy value of 0 is assigned for non paying households.

Years of stay: For the analysis, duration of stay, which is a continuous variable, has been converted to a dichotomous variable. This variable is created by taking dummy value of 1 for years of stay more than 20 and dummy value of 0 for less than 20 years. We also tried this analysis for other cut-off points for duration of stay. But this data set has very little variation and around 90 per cent of the households have been living in the slum for more than 20 years.

We have selected 20 years as a cut-off point for other area studies and in this exercise also we decided to go along with it.

Independent Variables

Variable	Value
Years of stay_20	1 for more than 20years 0 for less than or equal to 20 years
Land Ownership	1 for Public 0 for private and others
Property tax	1 for paying property tax 0 for otherwise
House document	1 for Yes 0 for No
BPL card	1 for yes 0 for no
Election card	1 for yes 0 for no
Ration card	1 for yes 0 for no

House document: This variable has been framed using “do you possess any quasi-legal document for the house?” dummy value of 1 is assigned if the households have a house document (even the quasi legal) and 0 for otherwise. The types of documents that a household possesses have been discussed earlier in the chapter.

Ration Card, BPL Card and Election Card: These are three variables. Households were asked to state whether they possess these cards. Dummy value of 1 is assigned if the households possess the card and 0 for otherwise. Possession of Ration card, BPL card and Election card are often independent of legal residential status as all these are extended to the households before election irrespective of the household’s tenural status. But these documents then create entitlements. Hence, we have included these three as independent variables as well in our analysis.

Dependent Variables

Type of housing: This variable has been created from responses on housing type, where the response categories are: (i) *pucca* (ii) *semi-pucca* (3) *katcha*. Since there are three categories, for analysis, housing type was recorded into a dummy variable: 1 for *pucca* and *semi-pucca* and 0 for *katcha*. We also tried out assigning a value of 1 for *pucca* and 0 for *semi-pucca* and *katcha*. However, the results are stronger in the former than the latter categorization.

Number of rooms: Households were asked to state the number of rooms they have. A dummy value of 1 is assigned to the households having more than 1 room and 0 for otherwise.

No of assets: Households were asked about owning of the different consumer durables / assets at their home. There were 16 types of consumer assets were found in the households.

To convert the continuous variable (which ranges between 0-16), dummy value of 1 is assigned if the households have more than 4 assets and 0 for less than or equal to 4 assets. We also tried with other cut-off points such as more than 6 assets, but could not get robust results.

Agency supplying water: This variable has been created by asking “*which agency supplies water?*” A dummy value of 1 is assigned if the agency supplying water is local government¹¹ and 0 for other agencies.

Sewer line: Households were asked to state whether they have sewerage connection to their settlement. A dummy value of 1 is assigned if the households have sewer line connection 0 for otherwise.

Strom water drains: This variable has been created by asking “*do you have separate storm water drainage in your system?*” dummy value of 1 is assigned if the settlement has the facility and 0 for otherwise.

Toilet facility: Households were asked to state whether they have toilet facility available to them or not. Dummy value of 1 is assigned if the households have the facility and 0 for otherwise.

Bath space: This variable was recorded as dummy variable by asking the availability of the bath space to the households. Value of 1 is assigned if the households have the facility and 0 for otherwise.

Employment_1: This variable was for the household head and there were number of options for this variable. Among these, we used a dummy value of 1 if the household head’s employment is regular and 0 for otherwise.

Employment_2: This variable was for the household head and there were number of options for this variable. Among these, we used a dummy value of 1 if the household head’s employment is non casual and 0 for casual.

Employment_3: This variable was a composite variable of the number of people working in a household and the type employment taken up by the household members. A dummy value of 1 is assigned if at least one of the employed members in the household is casual labour and value of 0 is assigned if all of the household employed members are non casual labour.

Number of people working in a family: The number of people working in a household variable was collected from household information data. This was collected as a continuous variable and recorded using dummy values: 1 if more than 1 person is employed in a household and 0 for otherwise.

Income: This variable was collected as a continuous variable and recorded in the analysis using dummy values: 1 for monthly income more than Rs. 2000¹² per household and 0 for otherwise. We tried with other income cut-offs but could not find any reliable result.

Independent Variables

Variable	Value
Type of housing	1 for <i>pucca</i> and semi <i>pucca</i> 0 for <i>katcha</i>
No of rooms	1 for 2 or more than 2 rooms 0 for one or less rooms
Assets	1 for more than 4 0 for 4 and less than 4
Agency Water Supply	1 for Public 0 for others
Sewer Line	1 for yes 0 for no
Strom water Drainage	1 for yes 0 for no
Latrine facility	1 for Yes 0 for No
Bath Space	1 for yes 0 for No
Employment_1	1 for non casual labour 0 for casual labour
Employment_2	1 for regular employment 0 non regular employment
Employment_3	1 for at least 1 casual labour in household 0 for no casual labour
No of people working in a family	1 for more than 1 0 for 1 or less than 1
Income	0 for less than or equal to 2000 1 for more than 2000

Relationships among the Variables

Factor analysis is used to know whether some underlying pattern of relationship exist among variables; discovering a new set of factors; or confirming existing factor(s) as being the true factor(s). Essentially, the factors defining shelter security have been derived using proxies as we do not have any straight forward or single indicator of tenure status. Because the variables constructing shelter security are many, the factors were subjected to oblique rotation to ensure that all variables are ascribed to a factor, and none is allocated to two or more factors (Okoro 2000).

Table 36 shows the results of the component factor extraction among the households in the sample. The table also shows the respective Eigen values and percentage of variance for the factors. The rule of thumb here is that only factors with Eigen values more than 1.0 should be used in further analysis. This criterion of identifying factors that explain the variance in the data was chosen because of the relatively large number of variables. It shows that only two variables had Eigen values greater than 1.0 and together were explaining 60 per cent of the

variance in the data set. Further, one single factor, Public land ownership explained 34.56 per cent of the variance, suggesting that this was the single most important factor determining shelter security as well as the social protection variables. Property tax payment was another variable explaining the data set variance of 25.7 per cent. Note that both these are independent variables in our hypothesis. Thus, indeed the variables of tenure are defining achievements with regards to other variables.

Table 36: Factors Explaining Data Variance among Variables, Amraiwadi, Ahmedabad

S. No		Eigen Values ¹³	% of Variance	Cumulative %
1	Public Land Ownership	1.382	34.560	34.560
2	Property Tax	1.029	25.727	60.287

Public land ownership is explaining the highest factor loading (with a value of -0.468) (Table 37), explaining that if the land is owned by a public agency then the shelter security is low and achievements with regards to social protection are low.

Table 37: Oblique rotated factor component correlations (factor loadings), Amraiwadi, Ahmedabad¹⁴

	Service related factors	Land related factors
Public Land Ownership	-.262	-.468
Property Tax	.881	-.008

The other important variable, property tax payment, explaining 25.7 per cent of the variance, has the factor loading of 0.881 explaining that there is higher security of tenure in the case of settlements paying property tax and this is so with regards to the households in settlements on private lands.

Logistic regression¹⁵

Logistic regression analysis uses the techniques of multiple regression analysis to research situations in which the variables are categorical. Since many of the variables in the data set are dichotomous, bivariate analysis has been carried out to observe and measure the impacts of tenure and other independent variables (which have been explained above) on social protection indicators.

The regression results presented in Table 38 shows the impact of public land ownership on the dependent variables. Public land ownership has negative impact on the quality of housing. The possibility of having *pucca* housing decreases by 59 per cent in slums on public lands, showing that households living on public lands face eviction threat and hence do not invest on housing improvement. Most of the households staying on public lands do not possess any documents to support their residency in that place and hence are more vulnerable to eviction threat. This probability of eviction threat has a significant impact on the other aspects of physical quality of life and social protection indicators. The availability of bath space decreases by 29 per cent, possibility of having more than four assets decreases by 69 per cent if the

household is living in a slum on public land. Regularity of employment of the household head decreases by 71 per cent among households indicating that looming eviction threat affects employment. Also, the possibility of holding a ration card decreases by 36 per cent as these are not recognised as citizens of a city. There is an inherent attitude among the local government officials not to legitimise the residents squatting on public lands, fearing that they would stake claims on the city as well as on the land encroached upon. Lastly, the likelihood of income being more than Rs. 2,000 per month decreases by 91 per cent in case of households on public lands.

Table 38: Impact of Public Land Ownership

Dependent variable	B	Wald	df	Sig.	Exp(B)
<i>Pucca</i> housing	-.879**	2.212	1	.137	.415
Assets more than 4	-1.152*	4.117	1	.042	.316
Availability of bath space	-.342	.394	1	.530	.710
People working in family more than 1	.125	.048	1	.827	1.133
Income more than Rs. 2000	-2.363*	5.976	1	.014	.094
Household head as regular employed	-1.230**	1.959	1	.162	.292
Household head as non casual labour	.151	.064	1	.800	1.164
At least one casual labour	.108	.053	1	.818	1.114
BPL card	-.061	.009	1	.926	.941
Ration card	-.438**	2.329	1	.127	.645

Note: * p<0.10; ** p<0.20

Table 39: Impact of Property Tax

Dependent variable	B	Wald	df	Sig.	Exp(B)
<i>Pucca</i> housing	.836	.440	1	.507	2.306
Assets more than 4	1.138	.793	1	.373	3.120
Availability of bath space	-2.590*	3.213	1	.073	.075
Persons working in family more than 1	-.772	.377	1	.539	.462
Income more than Rs. 2000	22.936	.000	1	.999	9.145E9
Regular employment	-2.121	1.139	1	.286	.120
Non casual labour	1.797	1.434	1	.231	6.029

Note: * p<0.10; ** p<0.20

The impact of property tax on *pucca* housing, number of assets and non casual labour employment of the household head has been positive. The possibility of *pucca* house increases by 131 per cent if the household is paying property tax (Table 39). The results are significant at 49 per cent. Payment of property tax has been higher in the case of private lands (See Table 3) and hence the probability of investing in house quality is higher in the settlements in the private lands. Further, possibility of owning more than four assets increases by 212 per cent if the households are paying property tax, with 73 per cent significance level. Lastly, the possibility of household head being non-casual labourer increases by 503 per cent in the households paying property tax. This relationship is significant at 77 per cent.

This analysis, also throws up some unexpected results; negative relationship between property tax payment and regular employment of the household head and property tax payment and availability of bath space.

Annexure

Annexure 1: Zone Wise Slums and Chawls, Ahmedabad

Zone*	No of Slums	No of Chawls
East	52	406
West	163	82
North	129	303
South	209	81
Central	155	86
Total	708	958

* The New west zone has been recently included in the municipal limit. Data is not available on slums of this zone.

Annexure 2: Ward Wise Slums and Chawls in East Zone, Ahmedabad

Wards in East zone	No of Slums	No of Chawls
Amraiwadi	11	76
Bapunagar	0	16
Bhaipura	0	73
Gomtipur	2	40
Khokhara	8	19
Nikol	3	40
Odhav	14	27
Rajpur	0	50
Rakhial	14	65
Total	52	406

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Notes

- ¹ We have found that in the early years the document of sale was done on Rs. 20/- stamp-paper and which increase to Rs. 50 subsequently. Some documents are also on higher value of stamp-paper.
- ² The traditional art of painting hand and feet with application of paste of a shrub called *Mehendi* or Henna
- ³ A vector disease spread through mosquitoes. This could be a debilitating disease, on account of its after effects such as severe joint pains.
- ⁴ Festival of folk dance of Gujarat state
- ⁵ Excerpts from Naulakha, Anuradha's unpublished Masters Dissertation on Micro Finance and Urban Poor – Understanding the Impact: Case of Ahmedabad.
- ⁶ This section is from Naulakha (2009). A Master's dissertation was supported from this research project.
- ⁷ Refer to discussions in the earlier sections of the article for categories of tenure security.
- ⁸ A Madrasi is being referred to a person from Madras, now known as Chennai. In the industrial areas of Ahmedabad, it seems that originally the migrants from Madras were engaged in money lending and subsequently, all those from South India and engaged in money lending are called Madrasi. This term has therefore become a euphemism for all those coming from South India and engaged in usurious money lending.
- ⁹ Others include working in a restaurant, in some shop, and in a hair cutting saloon and working as a guard, peon, household maid, cobbler, etc.
- ¹⁰ Nutritious: Intake of lentils, dairy products, green vegetables; unhealthy: stale bread, no dairy products, no lentils, less of vegetables
- ¹¹ Provision of basic services (water supply, sewerage and public health) has been one of the key responsibilities of the urban local bodies in India.
- ¹² The average monthly income of the household in Amraiwadi is Rs. 3,248. The regression analysis carried out using this as cut of point hasn't produced significant results.
- ¹³ Only variables with Eigen values more than 1 are presented
- ¹⁴ The factor loadings for variables are taken using Kaiser's rule of thumb which says that variables with coefficients of 0.3 and above may be used to name a factor.
- ¹⁵ The logistic regression assumes that the outcome variable, Y is categorical, but logistic regression doesn't model this outcome variable directly. For simplicity we assume that Y is dichotomous, taking on values of 1 for positive outcome and 0 for negative outcome. In theory, the hypothetical, population proportion of cases for which Y = 1 is defined as $p = P(Y = 1)$. Then, the theoretical proportion of cases for which Y = 0 is $1 - p = P(Y = 0)$. In the absence of other information, we would estimate p by the sample proportion of cases for which Y = 1.

Let:

$$P_i = \Pr(Y=1/X= x_i)$$

Then we can write the model:

$$\text{Log} (P_i/1-P_i) = \text{logit} (P_i) = \beta_0 + \beta_1 x_1$$

The parameter β_0 gives the log odds of an independent variable. In the table 1, for example, β_0 gives the log odds of the households stayed in the slum for 20 or less than 20 years and β_1 shows how these odds differ for the household stayed more than 20 years in the slum.

If we rewrite the model in terms of odds as:

$$(P_i/1-P_i) = \exp (\beta_0 + \beta_1 x_1)$$

Or in terms of the probability of the outcome occurring as:

$$P_i = \exp (\beta_0 + \beta_1 x_1) / (1 + \exp (\beta_0 + \beta_1 x_1))$$

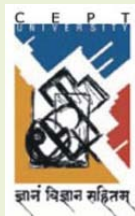
Conversely the probability of the outcome not occurring is

$$1 - P_i = 1 / (1 + \exp (\beta_0 + \beta_1 x_1))$$

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