Discussion Papers in Economics

# Poverty in Indian Cities during the Reforms Era

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December 2009

Discussion Paper 09-07

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# POVERTY IN INDIAN CITIES DURING THE REFORMS ERA

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## ABSTRACT

This paper seeks to understand temporal changes in poverty and well-being in Indian cities during the era of economic reforms. The evidence on improvements in well being is mixed. During this period, there was an increase in the number of urban poor. Using two nationally representative samples, we compare the joint distribution of monthly per capita expenditure (a private good) and access to drainage (a public good) in slums and non-slum areas of Indian cities to understand changes in well being. A comparison at two points in time, 1993 and 2002, suggests that the share of slum dwellers in urban poor has declined. However, we do not find evidence for improvement in the well-being of slum dwellers over time. We do find that non-slum urban dwellers are better off in 2002 compared to 1993.

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## INTRODUCTION

Despite emerging concerns on indicators of well-being in urban areas of the developing world, the poverty reduction strategy papers of many developing countries still focus primarily on rural poverty (Baker and Reichardt 2007). This is surprising since recent trends point to the phenomenon of urbanization of poverty, i.e., a decline in the count of number of rural poor and an increase in the number of urban poor (Ravallion, Chen, and Sangraula 2007). Further, in line with the higher level of urbanization in developing countries, the population residing in the slums has increased. It is estimated that a sixth of the world's population lives in slum like conditions with inadequate access to water, sanitation and housing. Beyond these averages, very little is known about changes over time in access to basic services and livelihoods in the cities of developing countries.

In this paper we seek to understand how urban well-being has changed in India since the onset of economic reforms in 1990s. During the period 1990-2004, India was the third fastest growing economy in the world (Ahmed 2007). Despite the high growth rate, concerns have been expressed over the rate of reduction in all India poverty and urban poverty in particular. Poverty declined at around 0.83 percentage points every year in the pre reform era (1973 - 1993) while during the decade of reforms (1993-2004) it declined at 0.61 percentage points per year. Urban poverty has declined at an average rate of 0.75 percentage points since 1973-74 onwards (Asian Development Bank 2009). There was no uptick in the annual rate of reduction of urban poverty. While the head count rate of poverty did decline, the total number of urban poor has increased over the last two decades (Government of India 2002, 2007). Hence, India is no exception to the ongoing trends towards urbanization of poverty (Figure 1). There is an emerging literature relating to

urbanization of poverty, the inadequacy of basic services and the quality of employment in India (Ali 2009, Asian Development Bank 2009). Mathur (2009) concludes that, "the absence of direct linkages between poverty, urbanization, income growth and income distribution has made the issue (of urban poverty) complex and multifaceted" (p.47).

While there was no significant increase in net rural – urban migration over the period 1981-91 to 1991-2001, in terms of absolute number, the extent of net rural urban migration in India was a staggering 14.2 million over the period 1991-2001. Indian cities have not been able to absorb such large inflows of people. This has compounded the problem of availability of basic services, viz. water, sanitation and housing and led to the proliferation of slums. The total number of slum dwellers increased from 28 million to 40.6 million over the period 1981-2001. There is some concern that there has been an undercount of number of slum dwellers.

In this paper we use data from two nationally representative household surveys from India to understand changes in living standards within Indian cities, in particular temporal changes in well-being of slum and non-slum residents of Indian cities. These surveys were conducted by National Sample Survey Organisation, India in January – June 1993 and July -December 2002. Both surveys are unusual in that they are the only surveys with information on whether a household lives in an urban slum or a non-slum urban area. We adopt fairly established techniques from the literature on distribution analysis (Atkinson and Bourguignon 1982, Fleurbaey, Hagneré, and Trannoy. 2003) to compare the distribution of monthly per capita expenditure (MPCE) over two points in time (1993 vs. 2002). We also examine the extent of heterogeneity in the cities. Policies aimed at growth often lead to an increase in inequality. We examine if there has been a change over the 1990s in intra group differences, i.e., if changes in inequality are driven more by difference between slum and non slum urban areas rather than intra group differences.

## LITERATURE REVIEW

While estimates of poverty are generated from a nationally representative survey of households, a distributional perspective facilitates a comparison of the well-being of individuals at two points in time. In particular, it allows us to examine the bottom end of the distribution, at income level much below the poverty line. In the context of India, Gravel and Mukhopadhyay (forthcoming) used distribution analysis to compare the welfare of households at two points in time 1995 and 2002 using the survey on consumption expenditure also conducted by NSSO. They examine the distribution of MPCE, the yardstick used for measuring poverty in India. They find that the MPCE of urban individuals in 2002 dominates that in 1995. This result conveys more information than estimates of head count ratio poverty. Urban poverty declined from 32.4 percent in 1993 to 25.7 percent in 2004[3]. The analysis by Gravel and Mukhopadhyay establishes that in 2002 the poorest of poor were better off than the poorest of the poor in 1995.

Other papers have used univariate distributional analysis to look at household outcomes. Tarozzi and Mahajan (2007) analyze changes in nutritional status of boys and girls using two rounds of India's National Family Health Survey. They compare the cumulative distribution functions of height-for-age z-scores (reflecting long-term nutritional status) between boys and girls using one wave and also compare the cumulative distribution functions over time for boys and girls separately. They find that nutritional outcomes improved more for boys than for girls.

Recent applications of distributional analysis often use location as a dimension. It is often true that indicators of well-being in urban areas are better than in rural areas. Duclos, Sahn, and Younger (2006) suggested the examination of joint distributions as an approach to understanding

[1] These are derived from bigger Consumer Expenditure Surveys carried out in 1993 and 2004.

well being in more than one dimension by including location as a dimension[4]. They focus on the joint distribution of per capita household expenditure and the height-for-age z-scores of children across rural and urban areas, using data from Ghana, Madagascar, and Uganda. Their comparison of the univariate distribution of income across rural and urban areas suggests that the outcomes in urban areas are superior to those in rural areas. However, when they consider the joint distribution of income and health outcomes, they find that urban outcomes are not unequivocally superior to rural outcomes.

Within urban areas, it is well recognized that slum dwellers are on the average worse off than non-slum urban residents. The combination of inadequate access to water and sanitation, poor quality housing, and overcrowding increases the health risks facing urban residents and the urban poor in particular. Slum dwellers are more disadvantaged in terms of maternal health services compared to households residing in non-slum urban areas (Rutstein, Johnson,and Montana 2005). The study undertaken by the Panel on Urban Population Dynamics concluded that poor households, particularly those located in slums, are unable to reap the urban health dividend (Montgomery, Stren, Cohen, and Reed 2003). What is lacking in the literature on urban livelihoods is a discussion of how outcomes have changed in the slums and non-slum urban areas of the cities in developing countries. This spatial stratification in urban areas has been recognized as important by the United Nations. It is projected that by 2030, 1.7 billion people will be living in slums (UN Millennium Project 2005a). Consequently, MDG-7 (Target 11) aims at improving the lives of at least 100 million slum dwellers by 2020. In the developing countries, the population residing in the slums has increased in line with the higher level of urbanization. It is estimated that a sixth of the world's population lives in slum

[4] Kakwani and Silber (2008a) provide a comprehensive overview of the issues concerning the measurement of multiple dimensions of poverty. The rationale for examining poverty and well being in a multidimensional framework has been clearly laid out in the volume of World Development edited by Kakwani and Silber (2008b)

like conditions. South Asia has the largest share of slum dwellers and 56 percent of South Asia's population lives under slum conditions (United Nations Population Fund 2007).

## DATA

We use two data sets collected by NSSO, one in 1993 and another in 2002 . The 1993 survey covered 44,367 urban households while the 2002 survey covered 41,916 urban households. Both surveys have information on where the household lives: in a slum or in a non-slum area of the city. (For details on the sampling frame and the methodology, see NSSO 1997, NSSO 2004).

The definition of a slum used by NSSO is similar to that of UN-Habitat (see NSSO 2003). Our analysis is at the all-India level since we do not have enough observations at the level of city. In line with the current practice, we restrict the analysis to 26 major states of India and exclude the north eastern states and Andaman and Nicobar Islands. We have information on 6027 slum and 33490 non-slum urban households in 1993 and 5759 slum and 31483 non-slum urban households in 2002. Each household is assigned a sampling weight by NSSO, and we use these weights in our analysis. Information on the monthly consumption expenditure of the household is available in the data set. In line with the literature we derive the MPCE which is the ratio of the household's monthly expenditure and size of the household. In line with the literature on poverty measurement, each individual is ascribed the MPCE of the household to which he or she belongs. We have 122 MPCE classes starting with Rs 0–50 and increasing in increments of Rs 50. Each individual is assigned the midpoint consumption of his or her class. This procedure allows us to work with a smooth MPCE grid. In order to make the MPCE data across the two rounds comparable, we use the consumer price index to update the 1993 MPCE to reflect 2002 prices. For the temporal comparison of availability

of public goods, we consider the drainage facilities available to the household and hence to the individual (no drainage, open kutcha, open pucca,[5] covered pucca, and underground).

**SUMMARY STATISTICS**

In line with the literature on poverty estimation, we report the head count ratio of poverty in slums and non-slum urban areas for the years 1993 and 2002. We define individuals as poor if their MPCE is below Rs 500 (US$ 10.86), the estimated all-India urban poverty line for 2002. We find that in 1993, 48 percent of people in the slums were living below the poverty line while 34 percent of people in non-slum urban areas were below the poverty line. In 2002, the proportion of people below the poverty in slums did not decline: the head count ratio of poverty was 48 percent. In the non -slum urban areas the head count ratio of poverty was lower at 30 percent[6]. Thus incidence of poverty in slums did not decline while it declined by 4 percentage points in non-slum urban areas.

One suggestion that has been made as part of the National Urban Poverty Reduction Strategy is that skills and training programmes and self employment assistance should be provided in the slums. The strategy paper advocates geographic targeting and goes on to state, "The advantage of geographic targeting is that it is administratively simple and does not carry any stigmatization or possible leakages" (p.42 Mathur 2009). However, our results clearly indicate that such a strategy of targeting livelihood programs only on the slums would bypass the large number of poor people living in the non-slum urban areas of India.

We now turn to non-income dimensions of well-being in urban India. We restrict our discussion to the 2002 survey where in addition to information on drainage we also have data on

[5] Kutcha implies a non-concrete structure, and pucca implies a more permanent concrete structure.
[6] Based on an analysis of 2002 survey, Chandrasekhar and Mukhopadhyay (2008) find that the distribution of MPCE in the non-slums does not dominate the distribution of MPCE in the slums. They find that in both slums and non-slum urban areas the distribution of per capita area is similar to that of MPCE. This is not surprising since MPCE and per capita area of dwelling are both private goods and will be positively correlated.

access to water source. Our objective is to examine the extent of correlation between poverty and access to basic services and how this varies by location[7]. Examination of these correlations is important since the poverty line in India and in many developing countries does not make any allowance for consumption of important non-food items. A household's access to water and sanitation is determined not only by its economic circumstances but also its location. From Table 1, it is evident that irrespective of the place of residence, the proportion of households without drainage decreases as we move from households in the lowest (Rs 0–300) MPCE class to the highest (over Rs 1925) class. Similarly, Table 2 shows that the proportion of households with access to water from a community source decreases as we move from households in the lowest to the highest MPCE class. This implies a positive correlation between access to improved water and sanitation and MPCE. It is also true, however, that every MPCE class contains households with access to each type of drainage system and with access to each type of water source.

The insights gleaned from Tables 1 and 2 become sharper when we plot the conditional distributions for the three urban locations. For each location, we plot the distribution of MPCE for each type of drainage (Figures 2-3). Given that access to sanitation can be thought of as a quasi public good, it would be instructive to examine the correlation between these goods and consumption expenditure of the households. A strong positive association between two dimensions implies that individuals with poor outcomes in one dimension have poor outcomes in the other dimension too.

Consider for instance a comparison of the degree of association between MPCE and drainage in the non-slum urban areas (Figure 2). The cumulative density function of MPCE of individuals

[7] Klasen (2008) points out that in the literature on pro-poor growth, there has been an excessive focus on the income dimensions of poverty (MDG-1). The logical question is whether the poor would benefit more than the non-poor from improvements in non-income dimensions. The work by Klasen is notable for its attempt to empirically address the issue of pro-poor growth using three non-income indicators: education, health, and nutrition.

with underground drainage (the best drainage option) lies below that of individuals without drainage. What this means is that at every level of MPCE, the proportion of individuals with no drainage is more than the proportion of individuals with access to closed drainage. This implies that the cumulative density function of MPCE of individuals with underground drainage dominates that of individuals without drainage. However, as is evident from Figure 3 this is not true for individuals living in slums. What this implies that an examination of joint distribution of MPCE and access to basic services should examine non-slum urban and slums separately.

**ARE URBAN DWELLERS BETTER-OFF?**

We now turn to a discussion of whether urban dwellers were better-off in 2002 compared to 1993. As mentioned earlier, Gravel and Mukhopadhyay (forthcoming) have established that urban residents are unequivocally better off in 2002 compared to 1993. They use the consumption expenditure schedule which does not have information on location of household within the city. Would we find a similar story emerging when we examine slums and non-slums separately?

We use the Union-Intersection method (UI)[8] proposed by Bishop and Formby (1999). A given distribution dominates another distribution if the difference between the CDFs is negative and significant at least one point (thus sufficiently below) and there is no difference that is positive and

[8] Union Intersection Method: Let $\hat{F}^A, \hat{F}^B$ be the empirical distributions. We calculate $T_i = \dfrac{\hat{F}^A(t_i) - \hat{F}^B(t_i)}{\hat{V}(F^A(t_i) - F^B(t_i))}$, for all $t_i$ in the 4 dimensional grid (over all values of the 4 goods observed in the data), and the variance $\hat{V}$ is the variance estimator derived by Davidson and Duclos (2000). Then $F^A$ dominates $F^B$ iff there exists some $T_i <- C_\alpha$ and there exists no $T_j > C_\alpha$, where $C_\alpha$ is the critical value (at significance level $\alpha$) given by the Studentized Modulos Distribution.

significant (the wrong direction). This is the easiest test to satisfy if one starts with an initial belief (null hypothesis) that a particular distribution stochastically dominates another.

The results of the pair-wise temporal comparisons are reported in Table 3. When we compare the univariate distributions of MPCE for slums in 1993 with that of 2002, we see that there is at least one point in each case (the maximum value of $T_i$) where the value of $T_i$ is greater than $C_\alpha$ (Table 3)[9]. Hence we can conclude that the distribution of MPCE of slum dwellers in 2002 does not dominate the distribution of MPCE of slum dwellers in 1993. The failure is not on account of failure of dominance only at the bottom of the distribution of MPCE.

However, we do find that the distribution of MPCE of non-slum urban dwellers in 2002 dominates the distribution of MPCE of non-slum urban dwellers in 1993. An immediate implication of this result is that at the bottom end of the distribution of MPCE among non-slum residents we find a statistically significant improvement. One can interpret this result as a finding that the poorest of poor were probably better off in 2002 than the poorest of the poor in 1993.

The findings based on the statistical tests become clearer from Figures 4 and 5. These figures provide the intuition behind the result of the statistical tests. Notice that in case of slum households, the plot of MPCE in 1993 and 2002 overlaps (Figure 4). However this is not true in case of the non-slum urban areas (Figure 5).

In 1993, among the urban poor, 20 percent were slum dwellers and 80 percent were non-slum dwellers. In 2002, among the urban poor, 16 percent were slum dwellers and 84 percent were non-slum dwellers. This implies that the share of slum dwellers among the urban poor actually decreased. But this does not mean that slum dwellers are better off than before. As our distribution analysis shows, the distribution of MPCE in 2002 in slums does not dominate the distribution of MPCE in

[9] The usual procedure followed is to look at the plot or table of all the $T_i$ values, but given that we have often four dimensions, this is not possible. Hence, for the sake of exposition, we state the minimum and maximum $T_i$ that is sufficient to convey our point.

1993. And this is reinforced by the finding that compared to 1993 there was no change in the head count ratio of poverty in 2002. Hence, in order to get a complete picture, one needs to examine the head count ratio of poverty, the share of individuals from each location among the poor and a comparison of the distributions of MPCE.

In both years, the distribution of drainage in the non-slum urban areas dominates the distribution of slums[10]. We also find that the joint distribution of drainage and MPCE in the non-slum urban areas in 2002 dominates the corresponding in 1993. When we consider joint distribution of MPCE and drainage in the slums in the year 1993 and 2002, a necessary condition for the joint distribution in 2002 to dominate the joint distribution in 1993 is that no region in the marginal distribution of each of these attributes in 2002 can be dominated by the marginal distribution in 1993. However we have already established that in case of the slums, the distribution of MPCE in 2002 does not dominate the distribution in 1993. Hence in the slums, the joint distribution of MPCE and drainage in 2002 does not dominate the distribution in 1993.

Given the different temporal trends in slum and non slum well being, we turn next to how much dissimilar they are. We look in particular at the dimension of inequality because there are genuine concerns that the growth process has not been inclusive in India. As mentioned earlier, there are concerns over the rate of reduction in poverty during the reform period in comparison to the pre-reform era. Inequality in urban India as measured by Gini Coefficient increased from 0.3406 in 1983 to 0.3751 in 2004 (Dev and Ravi 2007). Not surprisingly, inclusive growth is the avowed objective of the XI$^{th}$ five year plan. Using the two rounds of data we seek to understand the extent of within group and between group inequality. We find that the percentage of inequality explained by between group inequality has gone down from 5.8 percent to 4.6 percent. An implication of the finding is

10 The joint distribution of drainage facilities and rights to water source in non-slum urban areas dominates the corresponding distributions in slums. This corroborates the observation that the provision of water and sanitation services lags in the slums.

that, in terms of MPCE, the dissimilarity between the slum and the non slum dwellers has actually fallen over time. The within group component is what drives the extent of inequality in urban India.

## CONCLUSION

In India, the total number of urban poor increased by 5 million over the period 1983-1993 and by about the same amount in 1993-2004. There has been no marked improvement in the quality of employment in the cities. The proportion of workers employed in manufacturing declined from 28 percent in 1977-1978 to 22.7 percent in 1999-2000. One only observes an increase in the proportion of workers engaged in wholesale and retail trade and the services sector. However, these jobs are low skilled and low paying activities. Not surprisingly there are concerns whether quality of livelihoods in urban India could worsen with higher levels of urbanization. Twenty eight percent of Indians lived in urban areas in 2001. It is forecast that by 2020, 34.3 percent of India's population would be urban (United Nations Population Division 2008). It is estimated that by 2020, the total number of urban poor could be as high as 113.6 million (Mathur 2009). While it is feasible that there would be a reduction in head count ratio of poverty, it would represent an increase of 22 million over the year 2004-2020. The head count ratio of poverty could decline primarily on account of a larger population living in urban India. In the year 2004-05, the government's per capita spending was Rs 53 per urban poor. In contrast the government spent Rs 796 per rural poor person (Asian Development Bank 2009). Per capita spending on urban poor will have to increase given the higher level of urbanization and the projected increase in number of urban poor.

In light of the inability of cities to provide adequate infrastructure, it is expected that there would be an increase in number of slum dwellers. It is precisely for this reason that there is considerable skepticism over the ability over Government of India's objective of slum-free cities. Despite a reduction in head count ratio of poverty it is not necessary there would be an improvement

in access to basic services. As mentioned earlier, the poverty line does not make any allowance for consumption of public goods. The UN Millennium Project's Task Force on Improving Lives of Slum Dwellers argued, "The common approach to measuring poverty is to apply income-based poverty lines that make little allowance for nonfood costs. While the majority of the poor in many low- and middle-income countries continue to live in rural areas, official statistics tend to systematically underreport urban poverty due to lack of cost-of-living adjustments in income poverty estimates, the lack of disaggregation within urban areas, and inadequate definitions of access to water supply and sanitation, adequate shelter, or other infrastructure variables" (p 14-15 UN Millennium Project 2005a). In this paper we established the relationship between poverty and access to basic services is not straightforward and that this was driven by place of residence. The correlation breaks down in particular in the slums. We also find that the proportion of slum dwellers among the urban poor has fallen. This may tempt one to hypothesize that slums are doing better than before. However, we find that there is no improvement in the well-being, as measured by MPCE, of slum dwellers. This may, in part, be due to the perverse effects of increased migration into slums that deny slums the same fall in poverty as non slums. Indeed, with increased migration, concentration of policies only at slums may not lead to fall in urban poverty. Given the bulk of India's urban poor living in the non-slum urban areas, it may be better to have a more holistic approach to poverty reduction in urban areas.

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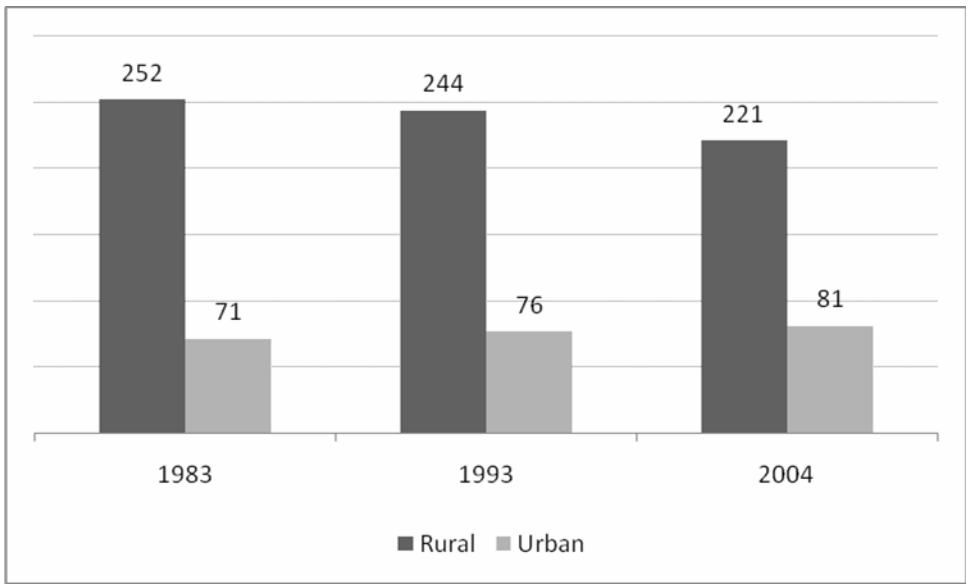


Figure 1: Total Number of People Living below the Poverty Line (in Millions) in Rural and Urban India in 1983, 1993, and 2004

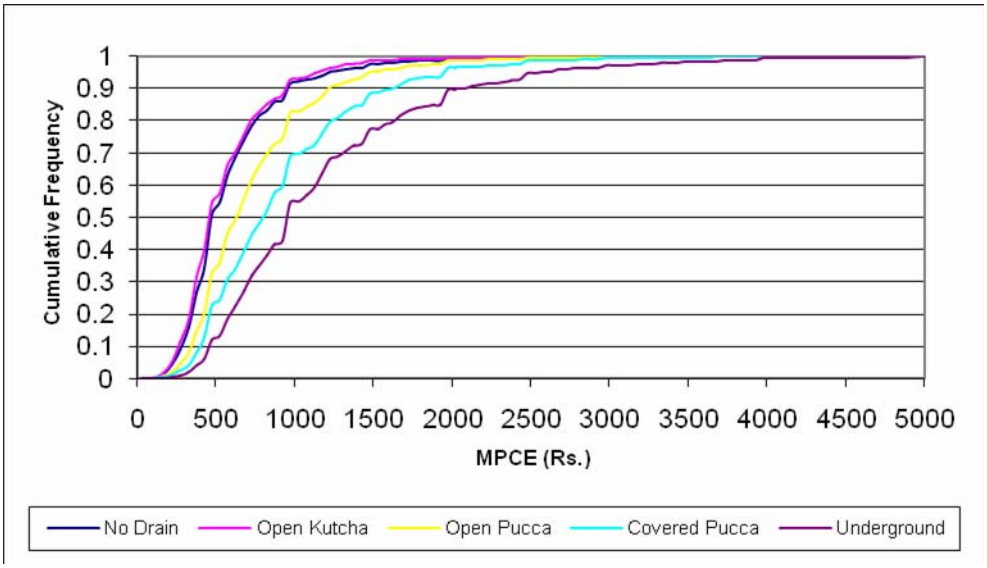


Figure 2: Distribution of Monthly Per Capita Expenditure (MPCE) by Drainage Type in Non-Slum Urban Areas

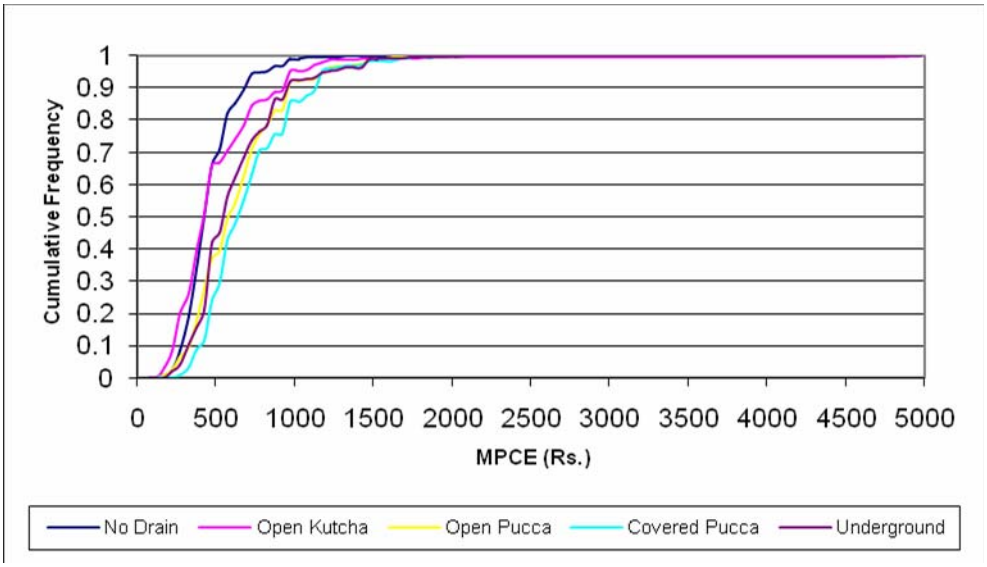


Figure 3: Distribution of Monthly Per Capita Expenditure (MPCE) by Drainage Type in Slums

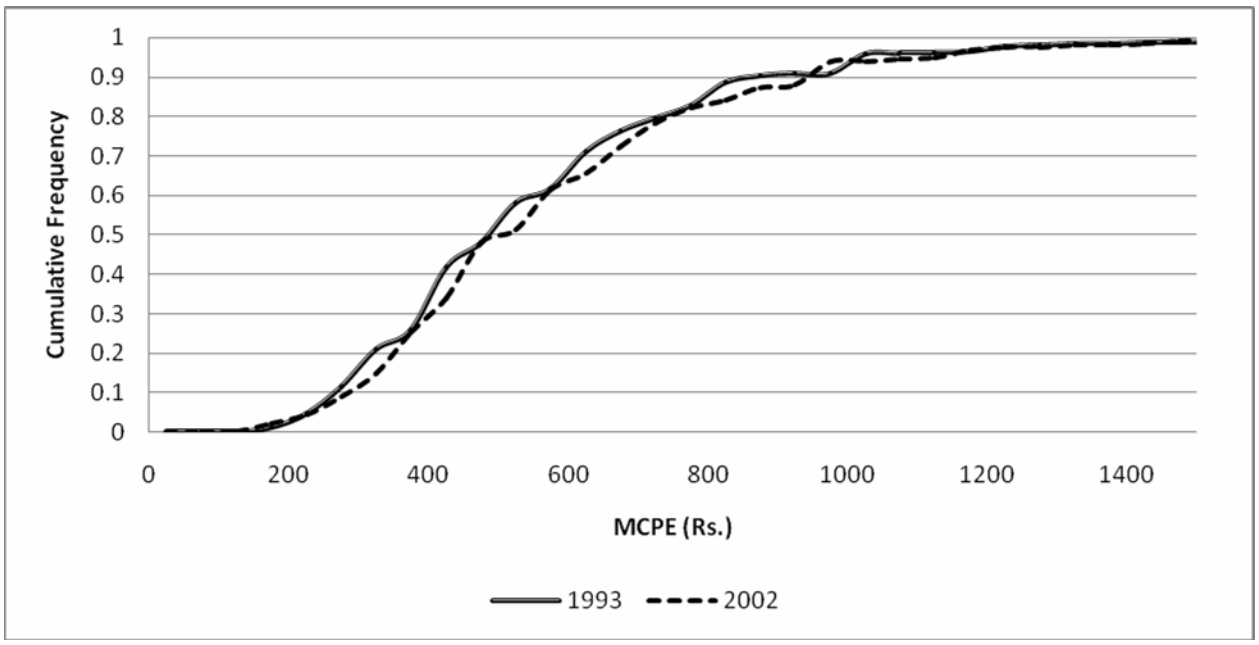


Figure 4: Distribution of Households by Monthly Per Capita Expenditure (Rs) in Slums

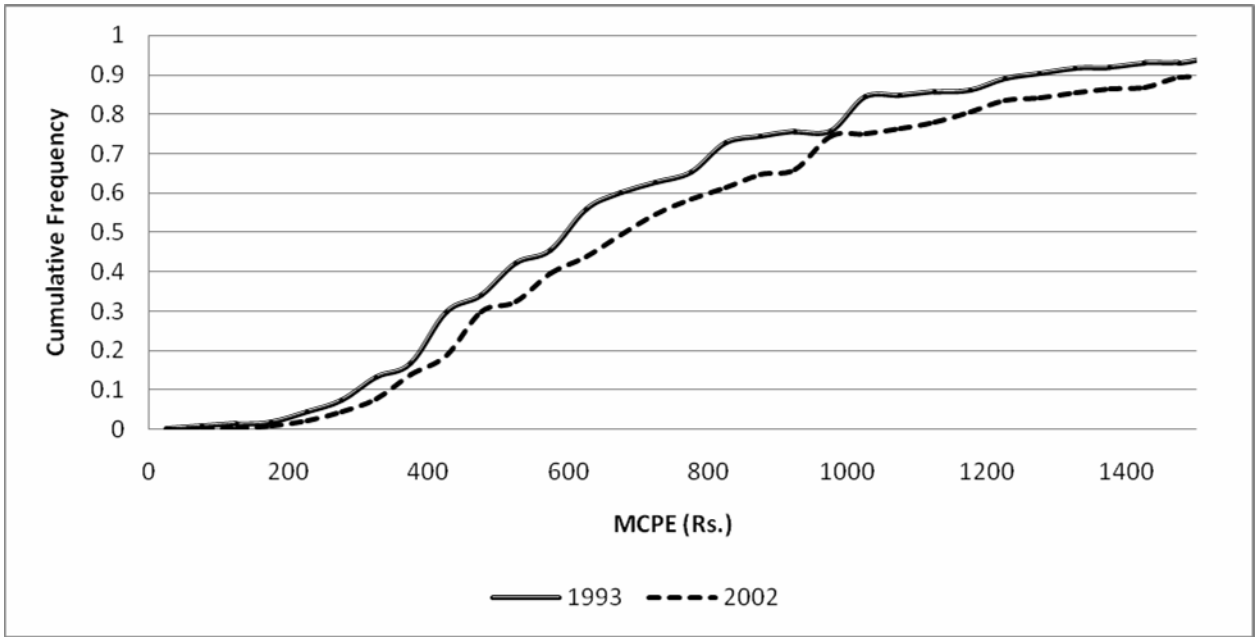


Figure 5: Distribution of Households by Monthly Per Capita Expenditure (Rs) in Non-Slum Urban Areas

**Table 1: Distribution of Households by Type of Drainage Arrangement for each Monthly Per Capita Expenditure Class**

| MPCE (Rs) | Residing in | No Drain | Open Kutcha | Open Pucca | Covered Pucca | Underground |
|---|---|---|---|---|---|---|
| 0-300 | Slum & Squatter Settlement | 48.5 | 24.7 | 21.5 | 0.6 | 4.7 |
| | Other Area | 34 | 21.8 | 26.7 | 9.3 | 8.2 |
| 300-350 | Slum & Squatter Settlement | 57.1 | 13.9 | 18.1 | 4.1 | 6.7 |
| | Other Area | 38.2 | 17.2 | 31.5 | 5.6 | 7.5 |
| 350-425 | Slum & Squatter Settlement | 39 | 16.7 | 30.5 | 7.3 | 6.4 |
| | Other Area | 32.7 | 16.3 | 33.6 | 7.4 | 10 |
| 425-500 | Slum & Squatter Settlement | 39.4 | 18.1 | 28.3 | 5.5 | 8.7 |
| | Other Area | 31.5 | 14.9 | 30.7 | 10.3 | 12.6 |
| 500-575 | Slum & Squatter Settlement | 34.7 | 10.4 | 26.3 | 10.6 | 17.9 |
| | Other Area | 26.9 | 11 | 34.7 | 10.4 | 17 |
| 575-665 | Slum & Squatter Settlement | 25.2 | 10.5 | 36.2 | 10.9 | 17.1 |
| | Other Area | 25 | 9 | 36.6 | 8.9 | 20.6 |
| 665-775 | Slum & Squatter Settlement | 20 | 12.4 | 47.4 | 10.2 | 10.1 |
| | Other Area | 16.9 | 9.5 | 38 | 12.1 | 23.5 |
| 775-915 | Slum & Squatter Settlement | 14 | 7.1 | 49.9 | 10.8 | 18.2 |
| | Other Area | 16.1 | 6.7 | 34.6 | 15.6 | 26.9 |
| 915-1120 | Slum & Squatter Settlement | 15.3 | 14.1 | 39.9 | 16.7 | 14 |
| | Other Area | 11.9 | 6.1 | 32.2 | 14.1 | 35.7 |
| 1120-1500 | Slum & Squatter Settlement | 7.1 | 11.8 | 45.1 | 23.1 | 12.9 |
| | Other Area | 6.9 | 4.1 | 29.3 | 17.4 | 42.2 |
| 1500-1925 | Slum & Squatter Settlement | 4.9 | 5.1 | 50.3 | 18.4 | 21.4 |
| | Other Area | 6.8 | 2.4 | 23.4 | 16.4 | 50.8 |
| Over 1925 | Slum & Squatter Settlement | 2.7 | 7.6 | 32.6 | 22 | 35 |
| | Other Area | 3.9 | 1.4 | 13.4 | 13.3 | 68 |
| All Classes | Slum & Squatter Settlement | 27.8 | 12.8 | 35.7 | 10.7 | 13 |
| | Other Area | 17.4 | 8 | 30.8 | 12.7 | 31.1 |

Note: Other Area excludes the homeless
Source: NSSO 2004

**Table 2: Distribution of Households by Rights to Source of Drinking Water for each Monthly Per Capita Expenditure Class**

| MPCE (Rs) | Residing in | Community Use | Restricted Use | Exclusive Use |
|---|---|---|---|---|
| 0-300 | Slum & Squatter Settlement | 84.1 | 5.6 | 10.3 |
| | Other Area | 54.8 | 21.1 | 24.1 |
| 300-350 | Slum & Squatter Settlement | 84.7 | 6.9 | 8.4 |
| | Other Area | 56.1 | 19.1 | 24.8 |
| 350-425 | Slum & Squatter Settlement | 82.2 | 10.9 | 6.9 |
| | Other Area | 54 | 20.6 | 25.5 |
| 425-500 | Slum & Squatter Settlement | 69.6 | 14.6 | 15.9 |
| | Other Area | 47.7 | 23.7 | 28.7 |
| 500-575 | Slum & Squatter Settlement | 72.3 | 11 | 16.7 |
| | Other Area | 42.1 | 22.8 | 35.1 |
| 575-665 | Slum & Squatter Settlement | 68.1 | 12.8 | 19.1 |
| | Other Area | 38.5 | 23.8 | 37.7 |
| 665-775 | Slum & Squatter Settlement | 60.8 | 18.1 | 21.2 |
| | Other Area | 28.3 | 29.8 | 41.9 |
| 775-915 | Slum & Squatter Settlement | 53.6 | 25.8 | 20.5 |
| | Other Area | 25.2 | 30.4 | 44.3 |
| 915-1120 | Slum & Squatter Settlement | 51.6 | 26.1 | 22.2 |
| | Other Area | 16.1 | 31 | 52.9 |
| 1120-1500 | Slum & Squatter Settlement | 39.7 | 37.2 | 23.1 |
| | Other Area | 12.2 | 27.7 | 60 |
| 1500-1925 | Slum & Squatter Settlement | 35.2 | 35.1 | 29.7 |
| | Other Area | 7.7 | 28.9 | 63.4 |
| Over 1925 | Slum & Squatter Settlement | 17 | 27.6 | 55.5 |
| | Other Area | 4.6 | 22.9 | 72.5 |
| All Classes | Slum & Squatter Settlement | 65 | 17.4 | 17.6 |
| | Other Area | 26.8 | 26.3 | 46.9 |

Note: Other Area excludes the homeless
Source: NSSO 2004

**Table 3: Results of First Order Stochastic Dominance Tests**

| **Null Hypothesis** | Minimum | Maximum | Critical Value $(C_\alpha)$ | Result |
|---|---|---|---|---|
| **Monthly Per Capita Expenditure** | | | | |
| 2002 Slum Dominates 1993 Slum | -8.66 | 6.11 | 3.82 | Reject |
| 2002 Non Slum Dominates 1993 Non Slum | -32.38 | 0.75 | 3.95 | Accept |
| | | | | |
| **Drainage** | | | | |
| 2002 Slum Dominates 1993 Slum | -11.75 | -8.66 | 3.08 | Accept |
| 2002 Non Slum Dominates 1993 Non Slum | -45.08 | -25.37 | 3.08 | Accept |
| | | | | |
| **MPCE and Drainage** | | | | |
| 2002 Non Slum Dominates 1993 Non Slum | -45.58 | 0.75 | 4.32 | Accept |