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Abstract

Despite glowing accounts of how well the Indian economy has performed in recent years, some disadvantaged groups-the Scheduled Castes (SC) and Scheduled Tribes (ST)-remain mired in acute poverty. The present study assesses their poverty and relative deprivation, and the underlying factors. Our analysis of the 61st round of the NSS for 2004-05 confirms higher incidence and intensity of poverty among the STs and SCs, relative to non-ST/SC (Others). A decomposition of poverty gap between these two groups and Others suggests that a large part of the poverty gap between the ST and Others is due to differences in returns or structural differences while among the SCs it is due largely to differences in characteristics. Whether these structural differences are a reflection of 'current' discrimination is far from self-evident. The policy design therefore cannot be limited to enhancing the endowments of the STs, SCs and other disadvantaged groups-women from these groups, for example, have to bear the double burden of deprivation-but must also address the issue of lower returns. While some of the disparity in living standards may have elements of discrimination, subject of course to the measurement problems, it is arguable that lower quality of education, location in remote, inaccessible areas with limited infrastructure and market access cause poverty and inequity to persist.

Key words: poverty, disparity, endowments, returns, discrimination.

JEL codes: A13, A14, D63, H53, I32, J15, J71.

Endowments, Discrimination and Deprivation among Ethnic Groups in Rural India[1]

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Introduction

Despite glowing accounts of how well the Indian economy has performed in recent years, some disadvantaged groups-the Scheduled Castes (SC) and Scheduled Tribes (ST)-remain mired in acute poverty. A recent study (Kijima, Y. (2006) "Caste and Tribe Inequality: Evidence from India, 1983-1999", *Economic Development and Cultural Change*, vol. 54) offers some surprising evidence on relative disparity in living standards (or, more precisely, in expenditure per capita) between these disadvantaged groups and Others in rural India, long after the government of India introduced its policy of affirmative action. This disparity reflects not just lower endowments of human and physical capital (e.g. education and land owned, respectively) but also lower returns on them among the SC and ST households. While there has been some reduction in the expenditure disparity over the period 1983-99, its decomposition into two components viz. (i) lower endowments, and (ii) lower returns, is worrying.

The SC were less worse-off than the ST in both 1983 and 1999. However, the sources of their disparities differ. While the SC households were more deprived (relative to the non-SC/ST households or Others) due equally to lower endowments and lower returns, the ST's deprivation resulted largely from lower endowments (about two-thirds). What is indeed surprising is that the relative importance of these sources has remained unchanged over the period 1983-99.

The present study throws new light on the sources of persistent poverty and inequity in rural India, drawing upon the 61st round of the NSS covering the period 2004-05. While the focus is on the ST and SC, as in Kijima (2006), Gang et al. (2007) and Borooah (2005, 2007), we explore some new dimensions linking identity and performance and their implications for policy design. The welfare effects of two major anti-poverty interventions-the Public Distribution System (PDS) and Food for Work Programme (FFW) are analysed, taking into account endogeneity of participation in them. Impact of reservations for the ST and SC at different levels-village Panchayats, and state

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legislatures-on public spending on health and education, and targeted programmes is assessed. The study concludes with some observations from a broad policy perspective.

Review of Literature

There has been a spate of studies in recent years, employing state-of- art econometric methods to assess the sources of inequality and poverty among different ethnic/caste groups. Three studies (Gang et al. 2006, Borooah, 2005, and Kijima, 2006) are of particular interest. As the models and decomposition procedures used are summarised in the Annex, the main findings are summarised below.

Since Gang et. al (2006) use a sophisticated methodology, and the 50th round of the NSS, we review their findings first.

- SC and ST households accounted for 16.5 per cent and 8.1 per cent, respectively, of India's population, but accounted for 43.3 per cent of the rural poor in 1993-94.
- The proportions of poor SC and ST households were 49.2 and 50.3 per cent, respectively, as compared with a proportion of 33.1 per cent among rural non-scheduled households. So the poverty incidence gaps were 16.1 per cent between SC and non-scheduled households, and 17.2 per cent between ST and non-scheduled households.
- The decomposition carried out by Gang et al. (2006) is revealing. It disaggregates the poverty incidence gap into (i) that due to differences in characteristics/assets (e.g. years of schooling), and (ii) that due to differences in the returns to assets and other household characteristics –including location. Under certain conditions, as elaborated elsewhere, the latter reflects an element of "current"discrimination.
- The predicted poverty incidence gaps turn out to be 14.9 per cent for the SCs, and 16.2 per cent for the STs. Gang et al. (2006) then decompose these gaps into the characteristic and structural components[2].
- A large fraction of the difference in poverty incidence between SC and non-scheduled households (62.5 per cent) is due to differences in levels of characteristics (e.g. education, occupation) while 37.5 per cent is due to differences in (transformed) regression coefficients.
- The characteristic effect of occupation contributes about 35.1 percent to the poverty incidence gap (e.g. less remunerative occupations such as agricultural labour as opposed to self-employment in agriculture).The coefficient effect is, however, smaller (barely 19 per cent), implying that even

[2] The characteristic component takes into account differences in household characteristics between two social groups, evaluated at the coefficients of the reference group. The structural component, on the other hand, reflects differences in returns to various characteristics, evaluated at the characteristics of, say, the disadvantaged group. For further details, see the Annex.

if the occupation was the same, SC households will be rewarded less than non-scheduled households (controlling for education and demographic effects). In other words, say, agricultural wage rate for SC household members will be lower. The characteristic effect of land owned contributes 8-12 per cent of the poverty incidence gap but there is no coefficient effect.

- Between ST and non-scheduled households, 39 per cent of the poverty gap is due to the characteristic effect. Difference in educational attainment, for example, accounts for 23.5 per cent of the poverty incidence gap between these two groups. The occupational distribution explains 18 per cent of the higher poverty among ST households. By contrast, 61 per cent of the gap between ST and non-scheduled households is due to the coefficient effect. The coefficient effect of education is negligible but that of occupation is substantial (about 29 per cent).

Another important contribution is Borooah (2005). The analysis is based on a household survey carried out by the National Council of Applied Economic Research in 1994[3].

- The mean household income was Rs 12972 per year (at 1994 prices). Being an SC or ST household meant lower average incomes-by Rs 2531 for SC households and by Rs 2074 for ST households (relative to upper- caste Hindu households)[4].
- The log difference between the mean incomes of Hindu and SC households was 0.411. When SC households were treated as Hindus, 36 per cent of this difference (0.150 out of 0.411) was due to lower returns (and the rest due to differences in attributes). In terms of the income differences between the Hindus and STs, 46 per cent was due to lower returns among the latter.
- As expected, the results differ depending on whether SC and ST households are treated as Hindus or whether the latter are treated as SC or ST. This renders the interpretation of differences in coefficients as reflecting discrimination more ambiguous. More on this later.

Borooah (2005) supplements this with an analysis of poverty gaps. This is based on different poverty lines: not poor comprise households with incomes above 75 per cent of the median income; mildly poor are households with incomes between 75 per cent and 50 per cent of the median income; moderately poor are those with incomes between 50 per cent and 25 per cent of the median income; and the remaining are very poor. The main findings are:

- On the basis of a poverty cut-off point of Rs 17, 202, nearly three –fourths of Hindu households, but just over half of SC and ST households were not poor; less than 15 per cent of Hindu households, but over 20 per cent of SC and ST were mildly poor; one in 10 Hindu households, but nearly 1 in 5 SC

[3] For methodological details, see the Annex.
[4] Hereafter upper caste Hindus are referred to as Hindus for expositional convenience.

and ST households was moderately poor; lastly, 4 per cent of Hindu households but 6 per cent of SC and ST households were very poor. In short, the incidence of poverty was higher at every level for SC and ST households, relative to Hindu households.

- Using the decomposition procedure employed earlier, it is reported that if SC and ST households were treated as Hindus (in the sense that their attributes/endowments were evaluated at Hindu coefficients) the proportion of non-poor SC and ST households would rise to 61 and 64 per cent, respectively; the proportion of mildly poor SC and ST households would fall to 18 and 17 per cent, respectively; and the proportion of very poor SC and ST households would fall to 6 and 5 per cent, respectively.
- The structural component (or the effect of differences in returns) is measured as the proportion of the difference, between Hindu and SC/ ST households, in their average probabilities of being at a poverty level (recall the case of three different levels of poverty), attributable to coefficient differences between different communities/social groups. Of the total difference between Hindu and SC households, and between Hindu and ST households, their average probabilities of being non-poor, 39 per cent for SC households and 58 per cent for ST households is ascribable to a discrimination factor when these groups were evaluated using Hindu coefficients. When, however, the profiles of SC/ST households were evaluated using Hindu coefficients, the corresponding figures were 27 per cent for SC households and 46 per cent for ST households. The difference in the probability of being very poor, due to the coefficient differences, was 35 per cent for the SC and 44 per cent for the ST. A general point is that this difference was larger for the ST than for the SC.

In a comprehensive and definitive recent contribution, Kijima (2006) offers a

Table 1
Decomposition of Sources of Inequality in (Log) Per Capita Expenditure

Social Group/Year	Difference in expenditure	Difference Due to Characteristics (%)	Difference Due to Structure (%)
ST			
1983	.315	64.3	35.7
1987	.297	58.3	41.7
1993	.254	66.6	33.4
1999	.267	66.6	33.4
SC			
1983	.228	45.2	54.8
1987	.216	49.9	50.1
1993	.224	50.9	49.1
1999	.191	50.2	49.8

Source: Kijima (2006)

comparative analysis of deprivation among ST, SC and non-ST/SC households in rural India over the period 1983-1999, based on various rounds of the NSS. He also uses a decomposition procedure which in part overcomes the ambiguity in measuring the contributions of attributes and structure to deprivation of SC and ST, relative to non-SC/ST group. Some of the findings reinforce the basic motivation for the present study as well as add some new dimensions to anti-poverty strategy. The main findings are summarised below.

- Two thirds of the disparities between ST and non ST/SC households are due to differences in characteristics but 50 per cent or less among SC households.
- The structural component declined slightly among both ST and SC households.
- To shed more light on the underlying reasons, the explanatory variables are divided into demographic characteristics, education dummies, land, and NSS regional dummies. The results show that (a) the characteristic disparities between ST and non-SC/ST are mainly due to education and location differences. In the case of SC, however, differences in land ownership contribute one fourth of the characteristic difference. (b) The structural difference between the ST and the non-SC/ST are due mainly to differences in the returns to location dummies. By contrast, in the case of the SC, the differences in the returns to education contribute a large part of the structural differences, especially in the 1990s.
- Some light is also thrown on why the structural differences are so large for ST and SC households. Let us first consider the case of the ST. (a) Districts with higher proportions of the ST are associated with poorer public goods such as schools, tapped water, paved roads, electricity, and health facilities. However, even when the effect of location is controlled for (through a decomposition of the sample of villages where ST and non-SC/ST households reside), structural differences still account for about one-third of the disparities. So there may well be a large element of discrimination. (b) Another possibility examined is whether returns to land and education also change with agro-ecological conditions. While interactions of land with indicators of district-level development are positive and significant, the interactions with education are not. Thus variations of agricultural development do not explain all of structural difference. So while the case for geographic targeting remains intact, the differences in returns in the mixed sample call for additional measures. (c) In an interesting decomposition for the SC, an attempt is made to examine whether occupational segregation has a role in explaining the structural difference between them and non-SC/ST households[5]. The component of occupational structure accounts for 54 per cent of the total structural difference between the SC and non-SC/ST households in 1983. This declined to 37 per cent in 1999. Instead, the

[5] For details of the decomposition, see Kijima (2006).

difference in the characteristics and the difference in the returns within the occupational category increased in the 1980s and 1990s. (d) It is, however, unclear how much of the structural difference is due to "current discrimination" against the SC. Historical patterns of employment may influence the SC's choice of occupations through low expectations and aspirations that force them to accept lower status jobs[6]. If job searches among low-caste men largely depend on caste-based contacts and networks, occupational distributions are likely to persist over time[7, 8].

Job Reservations

Borooah et al. (2007) carry out a detailed analysis of how occupational choices vary across different educational levels, ethnic groups, land categories, states, and urban areas, based on the 55th NSS round for 1993-94. A multinomial logit model is used, as shown in the Annex.

While this is an interesting study, it is of limited interest in the present context as it stops short of analysing the differences in living standards between different ethnic/religious groups. It does, however, offer a detailed analysis of occupational differences among them. The main findings are:

- Job reservations succeeded in raising the representation of persons from the SC and ST in regular salaried and wage employment by about 5 per centage points. This estimate is obtained by comparing their current representation in such jobs with what it would have been had they been treated as OBC Muslims. Given the arbitrariness of the reference group, it is argued that this estimated gain is an underestimate of the true gain from job reservations.
- Extension of reservations to OBC is misconceived[9]. Only 11 per cent of the employment deficit which non-Muslim OBC males faced, relative to forward caste Hindus, is attributable to the coefficient bias ('discrimination'), while between 33 and 37 of the deficit faced by Muslims is attributable to such bias. So if reservations are to be extended beyond SC and ST, Muslims have a stronger claim than the non-Muslim OBC.
- Job reservation policies need to be accompanied by greater emphasis on job-related attributes of persons from SC and ST. Given the disparity between

[6] See Akerloff (2000), and Hoff and Pande (2004, 2005).

[7] For an analysis of persistent disadvantages that SC/ST households face in Uttar Pradesh, see Kozel and Parker (20030. Their finding that " while about half the difference in welfare between the two groups (i.e. the SC/STand the majority)could be attributed to differences in asset holdings, a roughly equal share was due to differences in returns to asset stocks". Since various studies have drawn attention to not only differences in household attributes between SC and ST households but also in structural effects, the lumping together of SC/ST limits the usefulness of this study.

[8] The results are not dissimilar with the Neumark (1988) decomposition. For details, see Kijima (2006).

[9] This issue has figured prominently in recent debates to extend reservations in educational institutions to groups such as Other Backward Castes/classes. One principal difficulty is that there is considerable variation in their composition, and their living standards. See, for example, Shah (1997) and Beteille (2007).

them and forward caste Hindus, the focus must be on improving educational attainments of the former- especially at the school level. Before the vast mass of educationally and economically deprived children aspire to entering universities, they need to go to good schools.

Characteristics of SC, ST and Others

That the SC and ST-especially the latter- continue to be the most deprived in rural India- is corroborated by the 61st round of the NSS.

Let us first construct a profile of three social groups viz. the SC, ST and non-SC/ST/Others in terms of their endowments (i.e. human and physical capital) and occupational distribution.

Table 2
Cross-Classification of SC, ST, and Others by Land Operated[1]

Social Group/Land Operated	0-0.1 ha	0.1-2.5 ha	>2.5 ha	Total
ST	34.03 (8.57)	58.59 (12.87)	7.38 (11.56)	100 (10.91)
SC	62.02 (30.64)	36.00 (15.52)	1.98 (6.08)	100 (21.42)
Others	38.96 (60.80)	52.56 (71.60)	8.48 (82.36)	100 (67.67)
Total	43.36 (100)	49.67 (100)	6.97 (100)	100 (100)

1. Land owned and possessed.

Among the ST, about one-third were landless while the majority (about 59 per cent) operated some land (0.1-2.5 ha). A small fraction (a little over 7 per cent) operated >2.5 ha. This distribution contrasts with that for the SC, as the majority (about 62 per cent) were landless, and a little over one-third operated small areas (0.1-2.5 ha). Barely 2 per cent operated >2.5 ha. The distribution of Others was similar to that of the ST.

Table 3
Cross-Classification of SC, ST, and Others by Land Cultivated[1]

Social Group/Land Cultivated	0-0.1 ha	0.1-2.5 ha	>2.5 ha	Total
ST	35.12 (8.25)	58.56 (13.55)	6.31 (10.81)	100 (10.91)
SC	62.91 (29.00)	35.45 (16.10)	1.64 (5.51)	100 (21.42)
Others	43.09 (62.75)	49.03 (70.34)	7.88 (83.68)	100 (67.67)
Total	46.47 (100)	47.16 (100)	6.37 (100)	100 (100)

1. Land cultivated during July 2003 and June 2004.

The cross-classification of these groups by area cultivated, as shown in Table 2, is similar to that for area operated.

Table 4
Cross-Classification of SC, ST, and Others by Land Irrigated[1]

Social Group/Land Irrigated	0-0.1 ha	0.1-2.5 ha	>2.5 ha	Total
ST	80.55 (12.93)	18.48 (6.86)	0.97 (4.05)	100 (10.91)
SC	77.42 (24.39)	2.14 (16.12)	0.44 (3.64)	100 (21.42)
Others	62.96 (62.67)	33.48 (77.02)	3.56 (92.31)	100 (67.67)
Total	67.98 (100)	29.41 (100)	2.61 (100)	100 (100)

1. Land irrigated during July 2003 and June 2004.

All groups had limited access to irrigation, with large majorities enjoying little or no access (about 81 per cent of the ST, about 77 per cent of the SC and about 63 per cent of Others). While one-third of Others had small irrigated areas (0.1-2.5 ha), much smaller proportions of the ST and SC did.

Table 5
Cross-Classification of SC, ST, and Others by Highest Educational Level (Adult)[1]

Educational Level/Social Group	ST	SC	Others	Total
Illiterate	13.43 (61.94)	24.64 (57.85)	61.93 (42.58)	100 (47.68)
Literate	11.44 (8.92)	19.13 (7.60)	69.43 (8.07)	100 (8.07)
Primary	8.38 (10.68)	17.87 (11.60)	73.75 (14.02)	100 (13.18)
Middle	7.38 (10.66)	16.66 (12.25)	75.96 (16.35)	100 (14.93)
> Middle	4.99 (7.79)	13.46 (10.70)	81.55 (18.97)	100 (16.14)
Total	10.34 (100)	20.31 (100)	69.36 (100)	100 (100)

1. An adult household member is >18 years. As this and the two following tables are based on individual files, the relative frequencies refer to proportions of individuals.

About 69 per cent of individuals belonged to ST households without an adult with primary education (in other words, these households comprised adults who were either

illiterate or literate). About 11 per cent of the ST individuals belonged to households in which an adult had primary education. Barely 8 per cent of the ST belonged to households that included an adult with >Middle level of education. Among the SC, a slightly lower proportion of the individuals (about 65 per cent) belonged to households that lacked an adult with primary education. A slightly higher proportion of individuals (about 12 per cent) belonged to households that included an adult with primary education. About 11 percent of the ST individuals belonged to households that had an adult with >Middle education. Thus between the ST and SC, the latter were slightly better endowed in terms of human capital. The disparity between these two groups and Others was marked. The proportion of individuals who belonged to the latter without an adult with primary education was the lowest but high (about 51 per cent) while that of individuals in households with an adult with >Middle education was twice as high as among the SC.

Table 6
Cross-Classification of SC, ST, and Others by Highest Educational Level (Male)[1]

Educational Level/Social Group	ST	SC	Others	Total
Illiterate	15.16 (48.91)	26.22 (43.03)	58.62 (28.35)	100 (33.48)
Literate	12.56 (11.56)	20.34 (9.53)	67.11 (9.26)	100 (9.55)
Primary	9.49 (13.94)	19.34 (14.46)	71.18 (15.68)	100 (15.25)
Middle	7.79 (14.43)	18.07 (17.02)	74.14 (20.59)	100 (19.22)
> Middle	5.15 (11.16)	14.47 (15.96)	80.39 (26.13)	100 (22.50)
Total	10.38 (100)	20.40 (100)	69.23 (100)	100 (100)

1. Highest educational level of an adult male member.

Table 7
Cross-Classification of SC, ST, and Others by Highest Educational Level (Female)[1]

Educational Level/Social Group	ST	SC	Others	Total
Illiterate	12.50 (75.07)	23.78 (72.80)	63.72 (56.76)	100 (61.89)
Literate	9.81 (6.27)	17.38 (5.66)	72.80 (6.89)	100 (6.58)
Primary	6.86 (7.40)	15.86 (8.72)	77.29 (12.37)	100 (11.12)
Middle	6.64 (6.86)	14.12 (7.43)	79.24 (12.13)	100 (10.64)
> Middle	4.64 (4.40)	11.14 (5.39)	84.22 (11.85)	100 (9.78)
Total	10.30 (100)	20.21 (100)	69.48 (100)	100 (100)

2. Highest educational level of an adult female member.

About 60 per cent of the ST individuals belonged to households that lacked an adult male with at least primary education; and the corresponding shares among the SC and Others were about 53 per cent and about 37 per cent, respectively. Equally striking is the disparity among the ST, SC and others at the educational level>Middle. Others had more than twice the proportion of the ST individuals in households with an adult male who possessed >Middle education.

The disparities are indeed glaring in Table 7 where the ST, SC and Others are cross-classified by highest educational attainments of an adult female household member. About 81 per cent of the ST individuals belonged to households without an adult female with primary education, while the corresponding percentages for the SC and Others were 78 per cent, and 63 per cent, respectively. A similar pattern is observed for these three groups when they are cross-classified by primary education and higher levels. The proportion of individuals in Others with an adult female who possessed >Middle education nearly three times that of the ST and twice that of the SC. But above all what is striking is the relatively low proportions of individuals belonging to ST and SC households with adult females possessing primary or higher levels of education.

Table 8
Cross-Classification of SC, ST, and Others by Occupation[1]

Occupation/Social Group	ST	SC	Others	Total
Self-emp non-agr	4.66 (6.67)	19.43 (14.16)	75.92 (17.52)	100 (15.61)
Agr Labour	14.22 (34.88)	34.05 (42.53)	51.73 (20.46)	100 (26.76)
Other Labour	11.08 (10.88)	30.34 (15.17)	58.58 (9.28)	100 (10.71)
Self-emp-agr	11.79 (38.43)	11.55 (19.17)	76.65 (40.27)	100 (35.55)
Others	8.78 (9.15)	16.90 (8.97)	74.32 (12.48)	100 (11.37)
Total	10.91 100	21.42 100	67.67 100	100 100

1. Occupational classification is based on largest source of household income.

Let us first consider the distributions of the ST, SC and Others among the self-employed in agriculture and non-agriculture. A vast majority of the self-employed in agriculture (about 76 per cent) were Others, and relatively small but nearly equal proportions belonged to the ST and SC households (about 12 per cent). Among the self-employed in non-agriculture, again Others were a large majority (about 76 per cent), followed by the SC (about 19 per cent), and then the ST (about 5 per cent). The shares of the ST and SC households were higher among agricultural and non-agricultural labour- those of the latter were more than twice as high. Given the much larger number of Others, it is not

surprising that they comprised the majority in both occupations. No comment is offered on the shares in the residual occupational group, Others.

Let us now turn to the occupational distribution *within* each social group. The highest proportion of the ST households were self-employed in agriculture (over 38 per cent), followed by agricultural labour (about 35 per cent). Self-employed in non-agriculture and other labour accounted for relatively small shares. The SC, by contrast, had the highest share in agricultural labour (over 42 per cent), followed by self-employed in agriculture (about 19 per cent), and then self-employed in non-agriculture (about 14 per cent). Others were highly concentrated in self-employed in agriculture (over 40 per cent), followed by agricultural labour (over 20 per cent), and then self-employed in non-agriculture (about 18 per cent).

Table 9
Cross-Classification of SC, ST, and Others by Household Size

Household Size/Social Group	ST	SC	Others	Total
1	14.76 (6.82)	21.34 (5.02)	63.89 (4.76)	100 (5.04)
2-4	10.60 (41.36)	21.57 (42.90)	67.83 (42.71)	100 (42.61)
5-6	11.08 (32.94)	22.12 (33.52)	66.80 (32.03)	100 (32.45)
>6	10.35 (18.88)	19.96 (18.55)	69.69 (20.50)	100 (19.90)
Total	10.91 (100)	21.42 (100)	67.67 (100)	100 (100)

Within each social group, over 70 per cent of the households were concentrated in size groups, 2-4 and 5-6 persons. There were relatively small variations in their shares in the lowest and highest size categories (1 person, >6 persons, respectively).

The next three cross-classifications focus on whether expenditure per capita varies systematically by level of education, by occupation and by household size, among the three social groups.

Table 10
Expenditure of SC, ST and Others by Education[1]

Educational Level/Social Group	ST	SC	Others	Total
Illiterate	389	448	509	473
Literate	417	460	543	507
Primary	456	503	572	544
Middle	467	512	625	588
> Middle	660	651	860	818

Total	454	509	660	606

1. Each cell contains monthly per capita expenditure of a household. Education level is the highest attained by any adult household member.

There is a strong positive relationship between levels of education (highest educational attainment of an adult household member) and per capita expenditure. Between illiterate and Primary education among the ST, for example, the per capita expenditure of the latter is higher by over 17 percent; and between Primary and >Middle, the difference is 44 per cent. Similar distributions are observed for the SC and Others. However, what is also striking are the large differences in the per capita expenditures of various groups at the same level of education. For 'Illiterate', the per capita expenditure of the ST was Rs 389, as compared with Rs 448 of the SC and Rs 509 of Others. Such disparities prevailed at different levels of education too. For 'Middle', the per capita expenditures were Rs 467 (ST), Rs 512 (SC), and Rs 625 (Others). This suggests that there are other factors that work systematically against the ST and SC.

Excluding 'Others" as the residual occupational group (which incidentally accounts for the highest per capita expenditure in each social group), among the ST the highest per capita expenditure was associated with self-employed in non-agriculture, followed by self-employment in agriculture. Between agricultural and other labour households, the latter were better-off. Among the SC, both other labour and self-employed in non-agriculture were equally well-off while agricultural labour households were the worst-off. Among 'Others' (as a social group), self-employed in non-agriculture had the highest per capita expenditure, followed by self-employed in agriculture, and other labour. Again, across social groups, there are large differences within given occupations.

Table 11
Expenditure of SC, ST and Others by Occupation[1]

Occupation/Social Group	ST	SC	Others	Total
Self-emp non-agr	526	527	697	656
Agr Labour	383	436	469	445
Other Labour	434	527	615	568
Self-emp-agr	469	537	661	624
Others	596	728	946	878
Total	451	508	659	604

1. Occupational classification is based on the largest source of household income. Each cell contains monthly per capita expenditure of a household.

Table 12
Expenditure of SC, ST and Others by Household Size[1]

Household Size/Social Group	ST	SC	Others	Total
1	527	740	968	855
2-4	499	559	752	684
5-6	418	457	584	538

>6	375	419	511	478
Total	451	508	659	604

1. Each cell contains monthly per capita expenditure of a household.

Table 12 reveals a striking pattern – the larger the household size, the lower was the per capita expenditure-among each group. Among the ST, for example, per capita expenditure falls from Rs 527 in single-member households to Rs 327 in the largest size-group (>6 persons). Among Others too, there is a substantial reduction in per capita expenditure over the range of household size considered.

Incidence and Intensity of Poverty

The overall incidence of poverty in rural India in 2004-05 was high, as about a quarter of the households were poor. There was, however, substantial variation across the social groups. Among the ST, about 44 per cent of the households were poor, as against 32 per cent among the SC and about 19 per cent among Others.

Table 13
Cross-Classification of SC, ST and Others by Poverty Status[1]

Poverty Status/Social Group	ST	SC	Others	Total
Poor	19.22 (43.79)	27.74 (32.19)	53.03 (19.48)	100 (24.85)
Non-Poor	8.16 (56.21)	19.33 (67.81)	72.51 (80.52)	100 (75.15)
Total	10.91 (100)	21.42 (100)	67.67 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

Table 14
Cross-Classification of SC, ST and Others by Intensity of Poverty

Poverty Status/Social Group	ST	SC	Others	Total
Poor	265 (25.98)	284 (20.67)	293 (18.16)	285 (20.39)
Non-Poor	595	615	748	710
Total	451	508	659	604

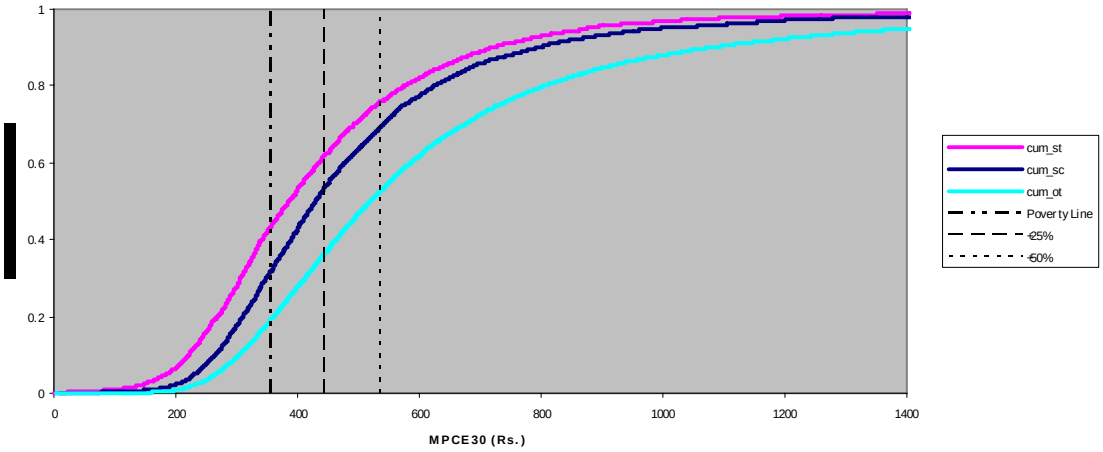
1. Figures within parenthesis are expenditure-poverty gaps. This gap is defined for the poor as the (difference between poverty cut-off point and per capita monthly expenditure of a poor household/poverty cut-off point) x 100.

Not only was the incidence of poverty highest among the ST, but also the intensity of poverty. The SC had a lower intensity of poverty than Others but the gap was non-negligible.

Using stochastic dominance, conclusions about a wider class of poverty indices (specifically, the FGT class of poverty indices) that allow for a range of poverty thresholds can be drawn.

As shown below in Fig: 1, the cumulative per capita expenditure distribution curve lies below that for the SC, and the latter below that for the ST over the range of poverty thresholds considered (25 per cent and 50 per cent higher than the threshold of Rs 358). It follows therefore that (i) the cdf of Others has stochastic dominance over those of the SC and ST, and (ii) that of the SC has dominance over that of the ST. These imply that, over the range of poverty thresholds, (i) poverty is lowest in the FGT class of poverty indices among Others; and (ii) lower among the SC relative to the ST. So regardless of the poverty cut-off point and the poverty index used, the ST were the poorest.

Figure 1: Monthly per capita expenditure in Rural India



Determinants of Poverty

In order to analyse the factors responsible for poverty among the ST, SC and non-SC/ST (Others), we have used a probit model.

Suppose that a household's MPCE is $\leq$ Rs 358. This household is classified as poor (y = 1), and another with a per capita expenditure greater than this cut-off point is classified as non-poor (y = 0). It is hypothesised that a set of household –specific characteristics (such as gender of household head, age of household head, educational attainment, land owned, number of adults in the household, occupational status), gathered in a vector, X, explain the household's poverty status (whether poor or non-poor), so that

$$\text{Prob}\,(y=1 \mid X) = F\,(\beta' X)$$

and Prob (y =0 | X) = 1- F $(\beta' X)$ (1)

The set of parameters, β, reflects the impact of changes in X on the probability of being poor.

Assuming the normal distribution, a probit specification is obtained.

$$\text{Prob } (y = 1 \mid X) = \int_{\infty}^{\beta' X} \phi(t)\, dt$$

$$= \Phi(\beta' X) \quad (2)$$

The function $\Phi(.)$ denotes the standard normal distribution.

The probability model is a regression

$$E\left[y \mid X\right] = 0\ \left[1\text{-F}\ (\beta' X)\right] + 1\ \left[\text{F}(\beta' \text{X})\right]$$

$$= \text{F}(\beta' \text{X}) \quad (3)$$

where $\text{F}(\beta' \text{X}) = \Phi(\beta' X)$

This model is estimated using ML[10].

The marginal effects are computed as

$$\frac{\partial E\left[y \mid X\right]}{\partial X} = \phi(\beta'\ \text{X})\beta \quad (4)$$

where ϕ (t) is the standard normal density.

A common test, which is similar to the F test that all the slopes in the regression are zero, is the likelihood ratio test. The likelihood ratio statistic is

$$\text{LR} = -2\left[\ln\ \hat{\text{L}}_{\text{R}} - \ln\ \hat{\text{L}}_{\text{U}}\right], \quad (5)$$

where $\ln \hat{\text{L}}_{\text{R}}$ and $\ln\ \hat{\text{L}}_{\text{U}}$ are the log-likelihood functions evaluated at the restricted and unrestricted estimates, respectively. This follows a χ^2 distribution with degrees of freedom equal to the number of restrictions being tested.[11]

Results

[10] For details, see Greene (1993).
[11] For details, see Greene (1993).

We have computed probit results for the aggregate sample, with dummies for ST and SC, and separately for each of the three social groups: ST, SC and Others. In addition, we have used state and NSS region dummies to capture locational fixed effects.

Let us first consider the results for the aggregate sample with ST and SC dummies (the default group being Others), and state fixed effects. The important findings are:

- There is a positive relationship between female headedness and poverty.

- Households with larger number of female and male adults are likely to be poor. However, the larger the proportion of adults in a household, the lower is the probability of it being poor.

- The probability of being poor decreases with age.

- The higher the (maximum) educational attainment of a household member, the lower is the probability of it being poor.

- The relationship between poverty and (per capita) landowned is negative but it weakens with size of landowned.

- Relative to the occupation (Others), each of the remaining four groups (i.e. self-emp-non agr, agr labour, other labour and self emp-agr) was more likely to be poor.

- Controlling for these effects, both the ST and SC were more likely to be poor.

- The overall specification is validated by the log-likelihood ratio test.

Let us now turn to the results with NSS region fixed effects.

In general, most results are similar. Note that landowned and its square are replaced with two land dummies. This specification is arguably more appropriate, given the ambiguity of land ownership among the ST and excessively large quantities of landowned among several households[12]. The results show that even small quantities of landowned reduce

[12] The dummy variable specification is based on the following classification of land owned per household, with the landless or nearly landless as the default category:

```
  RECODE of |
    land_op |
(Land-Owned |
        and |
possessed(h)|
                Freq.     Percent        Cum.
------------+-----------------------------------
     0-.1ha |34,365.7003       43.36       43.36
   .1-2.5ha | 39,366.447       49.67       93.03
     >2.5ha | 5,521.8527        6.97      100.00
```

significantly the probability of being poor. This specification is validated by the log likelihood ratio test.

Table 15

Determinants of Poverty in Rural India, 2004-05

(With State-Fixed Effects)

```
Probit regression                                 Number of obs   =      77781
                                                  LR chi2(48)     =   20007.96
                                                  Prob > chi2     =     0.0000
Log likelihood = -33440.794                       Pseudo R2       =     0.2303

------------------------------------------------------------------------------
        poor |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    fem_head |     .06502   .0200984     3.24   0.001     .0256278    .1044121
   ad_female |   .3301519   .0092596    35.66   0.000     .3120035    .3483004
     ad_male |   .2099265   .0089317    23.50   0.000     .1924206    .2274323
   ad_p_hhsz |   -1.80384   .0301793   -59.77   0.000    -1.862991    -1.74469
    age_h100 |  -.6359325   .2664723    -2.39   0.017    -1.158209   -.1136564
     _IagXag |  -.3010949   .2733001    -1.10   0.271    -.8367532    .2345635
  _Iedu_hr_2 |  -.2176908   .0149876   -14.52   0.000    -.2470659   -.1883157
  _Iedu_hr_3 |  -.4765587   .0152482   -31.25   0.000    -.5064445   -.4466728
  _Iedu_hr_4 |   -.862703   .0229002   -37.67   0.000    -.9075865   -.8178194
     land_pc |  -.7916856    .033934   -23.33   0.000    -.8581951   -.7251761
    land_pc2 |   5.427774   .1597097    33.99   0.000     5.114749    5.740799
 _Ihh_type_1 |   .1655249   .0261332     6.33   0.000     .1143048    .2167449
 _Ihh_type_2 |   .6356619   .0242366    26.23   0.000     .5881591    .6831648
 _Ihh_type_3 |   .3785274   .0276617    13.68   0.000     .3243115    .4327432
 _Ihh_type_4 |   .1880036   .0246408     7.63   0.000     .1397084    .2362987
_Isocial_g~1 |   .5245912   .0184391    28.45   0.000     .4884512    .5607312
_Isocial_g~2 |   .2243986   .0136599    16.43   0.000     .1976257    .2511715
       _cons |  -1.499202   .1595751    -9.39   0.000    -1.811963    -1.18644
```

The overall conclusion from these results is that even after controlling for demographic, educational, occupational, and locational characteristics and for landownership, the ST and SC are more likely to be poor than Others.

Let us now examine the probits for the ST.

The first probit does not include state or region fixed effects. The main findings are largely similar to those reported earlier with the aggregate sample. Two important differences, however, are: gender of household head and probability of being poor are unrelated; also, per capita landowned and poverty are unrelated. However, when landowned and its square are used in an alternative specification, the former has a significant negative coefficient and the latter has a significant positive coefficient[13]. The overall specification is validated by the log likelihood ratio test.

---

[13] In fact, in all three specifications-without fixed effects, and with state and NSS region fixed effects- a weakening relationship between poverty and landowned holds. Details will be furnished on request.

When state fixed effects are incorporated, there are minor differences. One is that there is a significant positive relationship between poverty and female household headship. The second change is that age of household head ceases to have a significant effect on poverty. Landowned and poverty are unrelated. All other variables have similar and significant effects, as in the previous case.

Table 16

Determinants of Poverty in Rural India, 2004-05

(With NSS Region Fixed Effects)

```
Probit regression                                 Number of obs   =      77781
                                                  LR chi2(91)     =   22193.08
                                                  Prob > chi2     =     0.0000
Log likelihood = -32348.232                       Pseudo R2       =     0.2554

------------------------------------------------------------------------------
        poor |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    fem_head |   .0746462   .0204528     3.65   0.000     .0345593     .114733
   ad_female |     .36656   .0094372    38.84   0.000     .3480634    .3850565
     ad_male |    .246064   .0091186    26.98   0.000     .2281918    .2639362
   ad_p_hhsz |  -1.960214    .030851   -63.54   0.000    -2.020681   -1.899747
    age_h100 |  -.7005057   .2718332    -2.58   0.010    -1.233289   -.1677223
     _IagXag |  -.3294215   .2786844    -1.18   0.237    -.8756329    .2167899
  _Iedu_hr_2 |  -.1949092   .0152685   -12.77   0.000    -.2248348   -.1649835
  _Iedu_hr_3 |   -.452831   .0156199   -28.99   0.000    -.4834455   -.4222164
  _Iedu_hr_4 |  -.8530322   .0234197   -36.42   0.000    -.8989339   -.8071304
_Iland_opr_2 |  -.1449672   .0142101   -10.20   0.000    -.1728186   -.1171159
_Iland_opr_3 |  -.6524062   .0318956   -20.45   0.000    -.7149204   -.5898919
 _Ihh_type_1 |   .1568695   .0265425     5.91   0.000     .1048472    .2088918
 _Ihh_type_2 |   .6430138   .0246325    26.10   0.000      .594735    .6912926
 _Ihh_type_3 |   .3825578   .0281849    13.57   0.000     .3273164    .4377992
 _Ihh_type_4 |   .1562242   .0253907     6.15   0.000     .1064594    .2059891
_Isocial_g~1 |   .5108021   .0196884    25.94   0.000     .4722135    .5493907
_Isocial_g~2 |   .2387852   .0140186    17.03   0.000     .2113092    .2662613
       _cons |  -1.685896   .3588313    -4.70   0.000    -2.389192   -.9825995
```

Table 17

Determinants of Poverty among ST in Rural India, 2004-05

```
Probit regression                                 Number of obs   =      12677
                                                  LR chi2(14)     =    2128.74
                                                  Prob > chi2     =     0.0000
Log likelihood = -7597.1442                       Pseudo R2       =     0.1229

------------------------------------------------------------------------------
        poor |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    fem_head |   .0417374   .0459758     0.91   0.364    -.0483735    .1318484
   ad_female |   .3300563   .0204334    16.15   0.000     .2900076    .3701049
     ad_male |   .2543071   .0196992    12.91   0.000     .2156974    .2929168
   ad_p_hhsz |  -1.700904   .0586607   -29.00   0.000    -1.815877   -1.585931
    age_h100 |  -1.386235   .5968446    -2.32   0.020    -2.556029   -.2164405
     _IagXag |   .4556221   .6347742     0.72   0.473    -.7885124    1.699757
  _Iedu_hr_2 |  -.3904635   .0297655   -13.12   0.000    -.4488029   -.3321242
  _Iedu_hr_3 |   -.582197   .0327019   -17.80   0.000    -.6462916   -.5181024
  _Iedu_hr_4 |  -1.147889   .0572806   -20.04   0.000    -1.260157   -1.035621
     land_pc |   .0015272    .001242     1.23   0.219     -.000907    .0039614
 _Ihh_type_1 |    .310062   .0760376     4.08   0.000     .1610311    .4590929
 _Ihh_type_2 |   .7813445   .0648211    12.05   0.000     .6542975    .9083915
```

_Ihh_type_3	.2824018	.0711506	3.97	0.000	.1429492	.4218545
_Ihh_type_4	.3756345	.0638873	5.88	0.000	.2504178	.5008512
_cons	.3298761	.1394975	2.36	0.018	.056466	.6032861

The third probit includes NSS region fixed effects. Again, the results are similar to the previous except that square of age of household head has a significant negative coefficient; and that of landowned is negative but this relationship weakens with land size. This specification is validated by the log likelihood ratio test.

As in the aggregate sample, we experiment with a dummy variable specification for landowned. This is particularly appropriate for the ST. The results with NSS region fixed effects show that the coefficient of the second land dummy has a significant negative coefficient. In other words, ST households owning >2.5 ha were less likely to be poor relative to the nearly landless.

Among the SC as well, the probability of poverty is positively related to the numbers of adult females and males, and negatively related to the proportion of adults; successively higher levels of educational attainment lower the probability of poverty relative to the combined category of literate and illiterate; land owned also lowers poverty; and all occupations raise the probability of poverty relative to the default occupation,'Others'.[14]

With state fixed effects, as in the case of the ST, the changes are minor. The only change is that female-headed households have a significantly higher probability of being poor. With NSS region fixed effects, similar results are obtained.

Table 18

Determinants of Poverty among ST in Rural India, 2004-05

(With State Fixed Effects)

Probit regression — Number of obs = 11709; LR chi2(39) = 4266.30; Prob > chi2 = 0.0000; Log likelihood = -5878.6814; Pseudo R2 = 0.2663

poor	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
fem_head	.1587785	.0516759	3.07	0.002	.0574957	.2600614
ad_female	.3964137	.0232925	17.02	0.000	.3507613	.4420662
ad_male	.3161202	.0225028	14.05	0.000	.2720156	.3602249
ad_p_hhsz	-2.039536	.0674757	-30.23	0.000	-2.171786	-1.907286
age_h100	-.4237323	.6823881	-0.62	0.535	-1.761188	.9137239
_IagXag	-.8688217	.7279043	-1.19	0.233	-2.295488	.5578445
_Iedu_hr_2	-.3167631	.0340224	-9.31	0.000	-.3834458	-.2500804
_Iedu_hr_3	-.4499507	.0380018	-11.84	0.000	-.5244329	-.3754686
_Iedu_hr_4	-.9739533	.0646596	-15.06	0.000	-1.100684	-.8472228
land_pc	.0016789	.0011298	1.49	0.137	-.0005355	.0038933
_Ihh_type_1	.3127666	.0868075	3.60	0.000	.1426271	.4829061
_Ihh_type_2	.7949672	.0739486	10.75	0.000	.6500306	.9399039
_Ihh_type_3	.4925177	.0818095	6.02	0.000	.3321741	.6528613
_Ihh_type_4	.4696597	.0729257	6.44	0.000	.3267279	.6125914

[14] Among the SC too, in all three specifications-without fixed effects, and with state and NSS region fixed effects-a weakening relationship between poverty and landowned holds.

_cons	-6.49489	.4422851	-14.68	0.000	-7.361753	-5.628027

Using a dummy variable specification for landowned groups, and NSS region dummies, both landowned dummies have significant negative coefficients. These results imply that SC households owning land between 0.1-2.5 ha and >2.5 ha were less likely to be poor

Table 19

Determinants of Poverty among ST in Rural India, 2004-05

(With NSS Region Fixed Effects)

(Specification-1)

Probit regression — Number of obs = 11630; LR chi2(71) = 4974.45; Prob > chi2 = 0.0000; Log likelihood = -5475.8328; Pseudo R2 = 0.3123

poor	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
fem_head	.1445541	.0534432	2.70	0.007	.0398074	.2493007
ad_female	.4195909	.0243209	17.25	0.000	.3719228	.4672591
ad_male	.3188963	.0235687	13.53	0.000	.2727025	.36509
ad_p_hhsz	-2.14439	.0718206	-29.86	0.000	-2.285156	-2.003624
age_h100	.1343061	.7097419	0.19	0.850	-1.256762	1.525375
_IagXag	-1.383499	.7590927	-1.82	0.068	-2.871293	.1042954
_Iedu_hr_2	-.296639	.0357472	-8.30	0.000	-.3667022	-.2265758
_Iedu_hr_3	-.4498396	.0403087	-11.16	0.000	-.5288432	-.370836
_Iedu_hr_4	-.9029789	.0672902	-13.42	0.000	-1.034865	-.7710925
land_pc	-.7455952	.0639663	-11.66	0.000	-.870967	-.6202235
land_pc2	7.694116	.279681	27.51	0.000	7.145951	8.24228
_Ihh_type_1	.3849351	.0901797	4.27	0.000	.2081861	.561684
_Ihh_type_2	.8573367	.0768694	11.15	0.000	.7066754	1.007998
_Ihh_type_3	.4907858	.0850759	5.77	0.000	.3240401	.6575315
_Ihh_type_4	.6961002	.0770052	9.04	0.000	.5451728	.8470276
_cons	-5.503596	332.1515	-0.02	0.987	-656.5086	645.5014

Table 20

Determinants of Poverty among ST in Rural India, 2004-05

(With NSS Region Fixed Effects)

(Specification-2)

Probit regression — Number of obs = 11630; LR chi2(71) = 4946.51; Prob > chi2 = 0.0000; Log likelihood = -5489.8027; Pseudo R2 = 0.3106

poor	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
fem_head	.1572331	.0534115	2.94	0.003	.0525485	.2619177
ad_female	.4605808	.0243208	18.94	0.000	.4129129	.5082487
ad_male	.3469525	.0234389	14.80	0.000	.301013	.392892
ad_p_hhsz	-2.273659	.0712373	-31.92	0.000	-2.413282	-2.134037
age_h100	.1540833	.7091726	0.22	0.828	-1.235869	1.544036
_IagXag	-1.564666	.7570459	-2.07	0.039	-3.048449	-.0808836
_Iedu_hr_2	-.3068351	.0357289	-8.59	0.000	-.3768626	-.2368077
_Iedu_hr_3	-.4475837	.0401883	-11.14	0.000	-.5263513	-.3688161
_Iedu_hr_4	-.9222463	.0674426	-13.67	0.000	-1.054431	-.7900612
_Iland_opr_2	.0319269	.035776	0.89	0.372	-.0381928	.1020466

_Iland_opr_3	-.5378823	.0681731	-7.89	0.000	-.6714992	-.4042654
_Ihh_type_1	.38888	.0899948	4.32	0.000	.2124934	.5652666
_Ihh_type_2	.870751	.0766631	11.36	0.000	.720494	1.021008
_Ihh_type_3	.5012813	.0849206	5.90	0.000	.3348399	.6677226
_Ihh_type_4	.6016835	.0771786	7.80	0.000	.4504162	.7529507
cons	-7.023204	.4779304	-14.70	0.000	-7.95993	-6.086478

than the nearly landless. All other results are similar to those reported earlier with NSS region dummies.

To avoid repetition, largely similar results are obtained for the residual group of households (Others).

Table 21

Determinants of Poverty among SC in Rural India, 2004-05

Probit regression — Number of obs = 13656; LR chi2(14) = 2245.77; Prob > chi2 = 0.0000; Log likelihood = -7433.1423; Pseudo R2 = 0.1312

poor	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
fem_head	.0614749	.0429992	1.43	0.153	-.022802	.1457519
ad_female	.3975017	.0215209	18.47	0.000	.3553215	.4396818
ad_male	.2280518	.0205095	11.12	0.000	.1878538	.2682497
ad_p_hhsz	-2.065241	.0649128	-31.82	0.000	-2.192468	-1.938015
age_h100	-.3245496	.5871305	-0.55	0.580	-1.475304	.8262051
_IagXag	-.7750215	.6107219	-1.27	0.204	-1.972014	.4219714
_Iedu_hr_2	-.2703417	.0314637	-8.59	0.000	-.3320094	-.2086739
_Iedu_hr_3	-.4440783	.0317045	-14.01	0.000	-.5062179	-.3819387
_Iedu_hr_4	-.6952036	.0507121	-13.71	0.000	-.7945975	-.5958097
land_pc	-.5846223	.0931116	-6.28	0.000	-.7671177	-.4021268
_Ihh_type_1	.3063874	.0605147	5.06	0.000	.1877807	.4249941
_Ihh_type_2	.7016605	.054493	12.88	0.000	.5948562	.8084647
_Ihh_type_3	.38721	.0598697	6.47	0.000	.2698676	.5045523
_Ihh_type_4	.2226309	.0597578	3.73	0.000	.1055078	.339754
_cons	-.0582824	.1373206	-0.42	0.671	-.3274258	.210861

Table 22

Determinants of Poverty among SC in Rural India, 2004-05

(With State Fixed Effects)

```
Probit regression                                 Number of obs   =      13593
                                                  LR chi2(36)     =    3520.55
                                                  Prob > chi2     =     0.0000
Log likelihood = -6761.3557                       Pseudo R2       =     0.2066

------------------------------------------------------------------------------
        poor |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    fem_head |   .0949391   .0448982     2.11   0.034     .0069402    .1829379
   ad_female |   .4072571   .0226671    17.97   0.000     .3628305    .4516837
     ad_male |   .2468262   .0216952    11.38   0.000     .2043043     .289348
   ad_p_hhsz |  -2.102641   .0689586   -30.49   0.000    -2.237798   -1.967485
    age_h100 |  -.4585996   .6198547    -0.74   0.459    -1.673493    .7562933
     _IagXag |  -.6063098   .6463315    -0.94   0.348    -1.873096    .6604766
  _Iedu_hr_2 |  -.1847699   .0334034    -5.53   0.000    -.2502393   -.1193005
  _Iedu_hr_3 |  -.3949093   .0340258   -11.61   0.000    -.4615987   -.3282199
  _Iedu_hr_4 |  -.6415112    .053685   -11.95   0.000    -.7467319   -.5362904
     land_pc |   -.706322   .1035932    -6.82   0.000     -.909361    -.503283
 _Ihh_type_1 |   .2925948   .0640053     4.57   0.000     .1671467    .4180428
 _Ihh_type_2 |   .6874928   .0577508    11.90   0.000     .5743033    .8006823
 _Ihh_type_3 |   .4776649   .0636678     7.50   0.000     .3528783    .6024516
 _Ihh_type_4 |   .1601764   .0631827     2.54   0.011     .0363406    .2840123
       _cons |  -1.479302   .4009771    -3.69   0.000    -2.265203   -.6934018
```

Table 23

Determinants of Poverty among SC in Rural India, 2004-05

(With NSS Region Fixed Effects)
(Specification 1)

```
Probit regression                                 Number of obs   =      13584
                                                  LR chi2(76)     =    4093.49
                                                  Prob > chi2     =     0.0000
Log likelihood = -6470.0256                       Pseudo R2       =     0.2403

------------------------------------------------------------------------------
        poor |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    fem_head |   .0865617   .0460811     1.88   0.060    -.0037556     .176879
   ad_female |   .4028381   .0232023    17.36   0.000     .3573625    .4483137
     ad_male |   .2576757    .022365    11.52   0.000      .213841    .3015104
   ad_p_hhsz |  -2.173482    .071549   -30.38   0.000    -2.313716   -2.033249
    age_h100 |  -.7339872   .6334711    -1.16   0.247    -1.975568    .5075934
     _IagXag |  -.3902468   .6598285    -0.59   0.554    -1.683487    .9029933
  _Iedu_hr_2 |  -.1514933   .0342338    -4.43   0.000    -.2185903   -.0843963
  _Iedu_hr_3 |   -.368661   .0350992   -10.50   0.000    -.4374541   -.2998678
  _Iedu_hr_4 |  -.6398062   .0552484   -11.58   0.000     -.748091   -.5315215
     land_pc |  -.8830563   .1105022    -7.99   0.000    -1.099637   -.6664761
 _Ihh_type_1 |   .2752233   .0651234     4.23   0.000     .1475838    .4028628
 _Ihh_type_2 |   .6805948   .0588253    11.57   0.000     .5652994    .7958902
 _Ihh_type_3 |   .4274099   .0650181     6.57   0.000     .2999769     .554843
```

_Ihh_type_4	.1851263	.0644584	2.87	0.004	.0587901	.3114625
_cons	-1.429516	.498874	-2.87	0.004	-2.407291	-.4517409

Table 24

Determinants of Poverty among SC in Rural India, 2004-05

(With NSS Region Fixed Effects)

(Specification-2)

Probit regression — Number of obs = 13584; LR chi2(77) = 4095.27; Prob > chi2 = 0.0000; Log likelihood = -6469.1352; Pseudo R2 = 0.2404

poor	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
fem_head	.086282	.0460839	1.87	0.061	-.0040408	.1766049
ad_female	.4027005	.0232039	17.35	0.000	.3572217	.4481793
ad_male	.2575622	.0223671	11.52	0.000	.2137236	.3014009
ad_p_hhsz	-2.17273	.0715552	-30.36	0.000	-2.312976	-2.032485
age_h100	-.7342917	.6334916	-1.16	0.246	-1.975912	.5073291
_IagXag	-.387407	.6598512	-0.59	0.557	-1.680692	.9058777
_Iedu_hr_2	-.1514011	.0342362	-4.42	0.000	-.2185029	-.0842993
_Iedu_hr_3	-.3686134	.0351018	-10.50	0.000	-.4374116	-.2998152
_Iedu_hr_4	-.6394783	.0552523	-11.57	0.000	-.7477708	-.5311858
land_pc	-.9184988	.1135017	-8.09	0.000	-1.140958	-.6960396
land_pc2	2.057788	.4090639	5.03	0.000	1.256037	2.859538
_Ihh_type_1	.2752088	.0651286	4.23	0.000	.1475591	.4028586
_Ihh_type_2	.6804488	.0588295	11.57	0.000	.5651451	.7957525
_Ihh_type_3	.4273222	.0650219	6.57	0.000	.2998817	.5547627
_Ihh_type_4	.188315	.0645107	2.92	0.004	.0618765	.3147536
cons	-1.429075	.4989644	-2.86	0.004	-2.407027	-.4511224

Table 25

Determinants of Poverty among SC in Rural India, 2004-05

(With NSS Region Fixed Effects)

(Specification-3)

Probit regression — Number of obs = 13584; LR chi2(77) = 4060.15; Prob > chi2 = 0.0000; Log likelihood = -6486.696; Pseudo R2 = 0.2384

poor	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
fem_head	.08085	.0460388	1.76	0.079	-.0093845	.1710845
ad_female	.4256595	.0232334	18.32	0.000	.3801228	.4711962
ad_male	.2702658	.0223528	12.09	0.000	.2264551	.3140765
ad_p_hhsz	-2.2308	.0714804	-31.21	0.000	-2.370899	-2.090701
age_h100	-.587164	.6339006	-0.93	0.354	-1.829586	.6552583
_IagXag	-.6012677	.6597201	-0.91	0.362	-1.894295	.6917599
_Iedu_hr_2	-.1510623	.034202	-4.42	0.000	-.2180969	-.0840277
_Iedu_hr_3	-.3619159	.0351286	-10.30	0.000	-.4307668	-.2930651
_Iedu_hr_4	-.6325317	.0552385	-11.45	0.000	-.7407971	-.5242663

_Iland_opr_2	-.1646391	.0321287	-5.12	0.000	-.2276102	-.101668
_Iland_opr_3	-.5270334	.1056423	-4.99	0.000	-.7340885	-.3199782
_Ihh_type_1	.2846582	.0650521	4.38	0.000	.1571585	.412158
_Ihh_type_2	.7009263	.058694	11.94	0.000	.5858882	.8159645
_Ihh_type_3	.4418198	.0649093	6.81	0.000	.3145999	.5690397
_Ihh_type_4	.1805216	.0649222	2.78	0.005	.0532765	.3077668
_cons	-1.440656	.49641	-2.90	0.004	-2.413602	-.4677101

Table 26

Determinants of Poverty among Others in Rural India, 2004-05

Probit regression — Number of obs = 52540; LR chi2(14) = 7913.00; Prob > chi2 = 0.0000; Log likelihood = -21903.528; Pseudo R2 = 0.1530

poor	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
fem_head	.0084498	.0241674	0.35	0.727	-.0389174	.0558169
ad_female	.3034983	.0109384	27.75	0.000	.2820594	.3249372
ad_male	.1932589	.0105044	18.40	0.000	.1726707	.2138471
ad_p_hhsz	-1.676891	.0369333	-45.40	0.000	-1.749279	-1.604503
age_h100	-.767701	.3244444	-2.37	0.018	-1.4036	-.1318016
_IagXag	-.0956394	.3284194	-0.29	0.771	-.7393295	.5480507
_Iedu_hr_2	-.2243874	.0185204	-12.12	0.000	-.2606867	-.1880881
_Iedu_hr_3	-.5238051	.0183147	-28.60	0.000	-.5597014	-.4879089
_Iedu_hr_4	-.9014365	.0267594	-33.69	0.000	-.9538839	-.8489891
land_pc	-.7950333	.0402006	-19.78	0.000	-.873825	-.7162415
_Ihh_type_1	.0947803	.0293882	3.23	0.001	.0371804	.1523802
_Ihh_type_2	.642014	.0277108	23.17	0.000	.5877019	.6963262
_Ihh_type_3	.2433018	.0324294	7.50	0.000	.1797414	.3068622
_Ihh_type_4	.1478187	.0277024	5.34	0.000	.0935229	.2021145
_cons	-.0781807	.0767573	-1.02	0.308	-.2286222	.0722608

Table 27

Determinants of Poverty among Others in Rural India, 2004-05

(With State Fixed Effects)

Probit regression — Number of obs = 52312; LR chi2(42) = 10524.09; Prob > chi2 = 0.0000; Log likelihood = -20516.741; Pseudo R2 = 0.2041

poor	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
fem_head	.0443454	.0252977	1.75	0.080	-.0052371	.0939279
ad_female	.3083254	.0113682	27.12	0.000	.2860442	.3306066
ad_male	.1880393	.0109872	17.11	0.000	.1665048	.2095739
ad_p_hhsz	-1.692802	.0388283	-43.60	0.000	-1.768904	-1.6167
age_h100	-.8547909	.3339817	-2.56	0.010	-1.509383	-.2001988
_IagXag	.0157351	.3381884	0.05	0.963	-.647102	.6785723
_Iedu_hr_2	-.2173032	.019424	-11.19	0.000	-.2553736	-.1792329
_Iedu_hr_3	-.5029303	.0195287	-25.75	0.000	-.5412058	-.4646548
_Iedu_hr_4	-.8967552	.0283389	-31.64	0.000	-.9522985	-.8412119
land_pc	-.7784565	.0435265	-17.88	0.000	-.863767	-.6931461
_Ihh_type_1	.1136257	.0308501	3.68	0.000	.0531607	.1740907
_Ihh_type_2	.6367975	.0293366	21.71	0.000	.5792987	.6942962
_Ihh_type_3	.3471394	.0343455	10.11	0.000	.2798233	.4144554
_Ihh_type_4	.1386774	.0292105	4.75	0.000	.0814258	.195929

_cons	-1.380823	.1825329	-7.56	0.000	-1.738581	-1.023065

Table 28

Determinants of Poverty among Others in Rural India, 2004-05

(With NSS Region Fixed Effects)

(Specification-1)

Probit regression — Number of obs = 52293; LR chi2(84) = 12165.00; Prob > chi2 = 0.0000; Log likelihood = -19690.285; Pseudo R2 = 0.2360

poor	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
fem_head	.0648687	.0258318	2.51	0.012	.0142393	.1154981
ad_female	.3030881	.0116041	26.12	0.000	.2803446	.3258317
ad_male	.1973526	.0112496	17.54	0.000	.1753038	.2194014
ad_p_hhsz	-1.729065	.0398299	-43.41	0.000	-1.80713	-1.651
age_h100	-.9346899	.3411378	-2.74	0.006	-1.603308	-.266072
_IagXag	.1149977	.345393	0.33	0.739	-.5619602	.7919555
_Iedu_hr_2	-.1887068	.0198848	-9.49	0.000	-.2276803	-.1497332
_Iedu_hr_3	-.471715	.0200167	-23.57	0.000	-.5109471	-.432483
_Iedu_hr_4	-.8800746	.0291247	-30.22	0.000	-.937158	-.8229911
land_pc	-.9712876	.0468288	-20.74	0.000	-1.06307	-.8795048
_Ihh_type_1	.0992024	.0314623	3.15	0.002	.0375374	.1608675
_Ihh_type_2	.6172014	.0299818	20.59	0.000	.5584381	.6759647
_Ihh_type_3	.3491699	.0350868	9.95	0.000	.2804009	.4179388
_Ihh_type_4	.1401069	.029924	4.68	0.000	.0814569	.1987568
_cons	-1.720678	.661213	-2.60	0.009	-3.016632	-.4247245

Table 29

Determinants of Poverty among Others in Rural India, 2004-05

(With NSS Region Fixed Effects)

(Specification-2)

Probit regression — Number of obs = 52293; LR chi2(85) = 12184.55; Prob > chi2 = 0.0000; Log likelihood = -19680.51; Pseudo R2 = 0.2364

poor	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
fem_head	.0641091	.0258369	2.48	0.013	.0134696	.1147485
ad_female	.30281	.0116071	26.09	0.000	.2800605	.3255596
ad_male	.1972649	.0112528	17.53	0.000	.1752098	.21932
ad_p_hhsz	-1.72778	.0398373	-43.37	0.000	-1.805859	-1.6497
age_h100	-.9268442	.341263	-2.72	0.007	-1.595707	-.2579811
_IagXag	.1106049	.3455245	0.32	0.749	-.5666106	.7878205
_Iedu_hr_2	-.188687	.0198895	-9.49	0.000	-.2276697	-.1497042
_Iedu_hr_3	-.4708418	.0200224	-23.52	0.000	-.510085	-.4315986
_Iedu_hr_4	-.8778086	.0291364	-30.13	0.000	-.9349149	-.8207023
land_pc	-1.060434	.0498904	-21.26	0.000	-1.158217	-.9626502

land_pc2	6.504273	.7488629	8.69	0.000	5.036529	7.972018
_Ihh_type_1	.0984371	.0314673	3.13	0.002	.0367623	.160112
_Ihh_type_2	.6167617	.0299844	20.57	0.000	.5579934	.6755301
_Ihh_type_3	.3477277	.0350909	9.91	0.000	.2789508	.4165047
_Ihh_type_4	.1487403	.0299852	4.96	0.000	.0899703	.2075102
_cons	-1.719834	.6613211	-2.60	0.009	-3.016	-.4236687

Table 30

Determinants of Poverty among Others in Rural India, 2004-05

(With NSS Region Fixed Effects)

(Specification-3)

Probit regression — Number of obs = 52293; LR chi2(85) = 11909.80; Prob > chi2 = 0.0000; Log likelihood = -19817.886; Pseudo R2 = 0.2311

poor	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
fem_head	.0660024	.0257675	2.56	0.010	.015499	.1165058
ad_female	.3415382	.011597	29.45	0.000	.3188085	.3642679
ad_male	.2259926	.0112464	20.09	0.000	.2039501	.2480352
ad_p_hhsz	-1.848566	.0396796	-46.59	0.000	-1.926336	-1.770795
age_h100	-.9875125	.3407682	-2.90	0.004	-1.655406	-.3196191
_IagXag	.0749433	.3449501	0.22	0.828	-.6011466	.7510331
_Iedu_hr_2	-.1874258	.0198184	-9.46	0.000	-.2262692	-.1485824
_Iedu_hr_3	-.4690666	.0199887	-23.47	0.000	-.5082438	-.4298894
_Iedu_hr_4	-.8860969	.0290157	-30.54	0.000	-.9429667	-.8292271
_Iland_opr_2	-.1648282	.0181228	-9.10	0.000	-.2003482	-.1293082
_Iland_opr_3	-.6575465	.0389975	-16.86	0.000	-.7339801	-.5811128
_Ihh_type_1	.1048898	.0314135	3.34	0.001	.0433205	.1664592
_Ihh_type_2	.6436222	.0299297	21.50	0.000	.5849609	.7022834
_Ihh_type_3	.3651061	.0350442	10.42	0.000	.2964207	.4337915
_Ihh_type_4	.1023653	.0303187	3.38	0.001	.0429417	.1617889
_cons	-1.695103	.6612717	-2.56	0.010	-2.991171	-.3990337

Decomposition of Poverty

Here a decomposition of average or expected probability of poverty by social group is carried out. As noted earlier, this relies on the Oaxaca-Blinder (1973) decomposition. This has two components: one is the characteristic component and the other is the structural component. Denoting average (predicted) probability of being poor among the ST, SC and Others as $\overline{P}_{ST}$, $\overline{\mathrm{P}}_{\mathrm{SC}}$, *and* $\overline{\mathrm{P}}_{\mathrm{O}}$, respectively, the decomposition is obtained as below:

$$\overline{\mathrm{P}}_{\mathrm{O}} - \overline{P}_{ST} = \left[p(X_O, \beta_O) - p(X_{ST}, \beta_O) \right] + \left[p(X_{ST}, \beta_O) - p(X_{ST}, \beta_{ST}) \right] \qquad (6)$$

Exactly the same decomposition of poverty between the SC and Others is carried out, where the first bracket contains the characteristics component and the second the structural component. In the first component, the differences in characteristics are evaluated using β_O of Others as the reference group. In the second, the characteristics of the ST (or SC) are evaluated taking into account the differences between β_O *and* β_{ST}.

This component is sometimes considered a measure of "discrimination". Along the lines of Kijima (2006), three observations are in order. (i) The first component, based on differences in characteristics, could itself reflect discrimination over a period. (ii) The lower returns to land among the ST, on the other hand, could be lower simply because they are largely located in relatively inaccessible areas. This implies that this component could be non-zero even if there is no discrimination in the sample year. (iii) The results will change if the reference group (Others) changes to the ST or SC. Another option is the Neumark (1988) decomposition in which the reference group is a composite of all three[15]. Whether the β_c (obtained from a probit on the complete sample) represent no-discrimination returns is not persuasive.

In order to disaggregate the characteristics and structural components, we take advantage of a decomposition due to Yun (2004). All that is needed is to disaggregate the characteristics and structural components using two sets of weights.

$$W^i_{\Delta X} = \frac{(\overline{X}^i_O - \overline{X}^i_{ST})\beta^i_O}{(\overline{X}_O - \overline{X}_{ST})\beta_O}, \qquad (7)$$

$$W^i_{\Delta\beta} = \frac{\overline{X}^i_{ST}(\beta^i_O - \beta^i_{ST})}{\overline{X}_{ST}(\beta_O - \beta_{ST})}, \quad \text{and} \ \sum_{i=1}^{i=K} W^i_{\Delta X} = \sum_{i=1}^{i=K} W^i_{\Delta\beta} = 1 \qquad (8)$$

These weights are defined for individual variables, i=1, 2, K, and add up to 1.

The results of the decomposition with NSS region fixed-effects are given below.

Table 31

Decomposition of Poverty

Variables	Difference in Characteristics (Others and ST)	Structural Differences (Others and ST)	Difference in Characteristics (Others and SC)	Structural Differences (Others and SC)
Demographic	0.001	-0.069	0.001	-0.027
Education	-0.037	0.008	-0.022	0.003
Land	0.001	-0.038	-0.016	-0.016
Occupation	-0.025	-0.093	-0.031	-0.038
Region	-0.038	-1.511	0.002	-0.623

[15] This is done with the help of a probit/OLS regression on the complete sample. In other words, the coefficients, β_c, come from the probit combining the ST, SC and Others.

Intercept		1.560		0.644
Difference in Probability of being Poor	-0.098	-0.141	-0.068	-0.057

Note that the probability of poverty turns out to be 0.434 among the ST, 0.320 among the SC and 0.195 among Others. Actual proportions of poor were 0.439 among the ST, 0.320 among the SC, and 0.195 among Others. So the predicted probabilities of being poor among these groups approximate closely actual proportions of poor among them.

The contrast between the ST and SC in terms of characteristic and structural components is striking. Between Others and ST, structural differences account for about 59 per cent of the difference in the probabilities of being poor while among Others and SC the larger component is that associated with differences in characteristics (about 55 per cent). A disaggregation of these components reveals that: (i) between Others and the ST, the highest contributor to the characteristic component is location, followed by education and then occupation; (ii) A very large share of the structural component is attributable to location, with occupation, demography and education accounting for relatively small shares. Between Others and the SC, on the other hand, occupation accounted for the largest share of the characteristic component, followed by education and then land. There are, however, sharp changes in the disaggregated structural components. The largest component is location, followed by occupation and education[16]. So, although the SC are more dispersed than the ST, they are also subject to lower returns.

Some comments on these results are helpful. The first point to note is that the differences are in the probabilities of being poor in pairwise comparisons between the ST and Others, and between the SC and Others. Since educational attainments of the ST households are lower than those of Others, even if the former are evaluated at the βs of Others, the probability of poverty among the ST is likely to be higher. Similarly, occupational and and locational differences evaluated at the corresponding βs of Others would result in higher poverty among the ST. This suggests that the concentration of the ST in occupations and locations that are not so remunerative even for Others is considerably higher than that of Others.

As far as the structural component is concerned, the differences in probabilities of being poor stem from differences in the βs of a pair of social groups, given the set of characteristics of a disadvantaged group (e.g. the ST or SC). A somewhat striking result is that, given the demographic characteristics of the ST, the probability of being poor would be lower with the βs of Others than with those of the ST. Similarly, as the returns to land and occupation among Others are higher, the probability of being poor would be

[16] Recall that these results are similar to those reported by Gang et al. (2006).

lower with these characteristics of the ST. Most strikingly, given the location of the ST, the returns to Others are so much higher that the probability of being poor of the former is considerably lower with these returns.

Let us now turn to the results of the comparison of the SC and Others. Given the differences in educational attainments between these two groups, and the βs of Others, the poverty among the SC would still be higher. This is consistent with lower educational attainments of the SC. Similar results are obtained for occupation and landowned differences between these two groups. Other characteristic differences result in small or negligible differences in the probabilities of being poor.

In the structural component, the differences due to locational returns being considerably higher among Others causes the probability of being poor to be higher among the SC. The next in order of importance are the differences in the returns to occupations and demographic factors. While differences in returns to land are also higher among Others, and consequently the probability of being poor is higher among the SC with their own returns, the difference in the probabilities of being poor is small.

Some results are different with the reference group being the aggregate sample of households. First, as expected, the poverty gaps are smaller both for the ST and SC. Second, the structural component is slightly lower than the characteristic component for the ST but still large. Within the latter, education and region are relatively large, while in

Table 32

Decomposition of Poverty[1]

Variables	Difference in Characteristics (Aggregate and ST)	Structural Differences (Aggregate and ST)	Difference in Characteristics (Aggregate and SC)	Structural Differences (Aggregate and SC)
Demographic	-00012	-0.064	0.0004	-0.023
Education	-.029	.003	-0.015	0.001
Land	.005	-.041	-0.013	-0.016
Occupation	-.016	-.086	-0.023	-0.032
Region	-.063	-1.719	0.008	-0.646
Intercept		1.822		0.684
Difference in Probability of being Poor	-0.104	-0.085	-0.042	-0.032

1. Note that these compositions are based on a variant of the Neumark (1988) decomposition to circumvent the difficulty of the Oxaca-Blinder (1973) decomposition-specifically, the sensitivity of the decomposition to the reference group (Others in the preceding decomposition). Here a pooled probit is run and the aggregate is compared with the ST and SC households. The probit results are given in the Annex.

the former, the regional contribution dominates. Among the SC, the characteristic component is slightly larger, as in the previous decomposition. Occupation, education and land are relatively large, as before. In the structural component, location dominates but not as much as among the ST. So these results are largely similar to those reported earlier with a different decomposition.

In sum, the poverty among the ST and SC is higher both because of differences in characteristics and returns on them. However, their relative importance varies. It is a matter of policy concern that much of the deprivation of the ST is linked to lower returns-especially their location in remote, inaccessible areas with weak infrastructure support.

Decomposition of Inequality

In order to assess the sources of disparity in living standards of , say, the ST and Others, we first estimate expenditure functions for each group separately. In the next step, using a procedure similar to the decomposition of poverty (i.e. the Oxaca-Blinder decomposition), we decompose the difference in expenditure into characteristic and structural components.

Let us first consider the expenditure functions for the ST, SC and Others.

Table 33

Determinants of (log) of MPCE among the ST

(With NSS Region Fixed Effects)

```
      Source |       SS       df       MS              Number of obs =   12677
-------------+------------------------------           F( 85, 12591) =  140.56
       Model |  1412.78238    85  16.6209692           Prob > F      =  0.0000
    Residual |  1488.91242 12591  .118252118           R-squared     =  0.4869
-------------+------------------------------           Adj R-squared =  0.4834
       Total |   2901.6948 12676  .228912496           Root MSE      =  .34388

------------------------------------------------------------------------------
    lmpce30h |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    fem_head |  -.0344613   .0118722    -2.90   0.004    -.0577326     -.01119
   ad_female |  -.1336235   .0052216   -25.59   0.000    -.1438586   -.1233885
     ad_male |  -.0986098   .0051196   -19.26   0.000     -.108645   -.0885746
   ad_p_hhsz |    .640753   .0145665    43.99   0.000     .6122005    .6693056
    age_h100 |  -.1007447   .1546428    -0.65   0.515    -.4038681    .2023787
     _IagXag |   .4599637   .1647789     2.79   0.005      .136972    .7829554
  _Iedu_hr_2 |   .0902455    .008109    11.13   0.000     .0743507    .1061403
  _Iedu_hr_3 |   .1670001   .0089808    18.60   0.000     .1493963    .1846038
  _Iedu_hr_4 |   .3281161   .0134187    24.45   0.000     .3018134    .3544189
     land_pc |   .1365766    .009878    13.83   0.000     .1172142    .1559389
    land_pc2 |  -.0075092   .0005421   -13.85   0.000    -.0085718   -.0064465
 _Ihh_type_1 |  -.1445392   .0180853    -7.99   0.000    -.1799892   -.1090892
 _Ihh_type_2 |   -.327303   .0151622   -21.59   0.000    -.3570233   -.2975827
 _Ihh_type_3 |  -.2097002   .0173033   -12.12   0.000    -.2436173    -.175783
 _Ihh_type_4 |  -.2378204   .0148035   -16.07   0.000    -.2668375   -.2088033
        cons |   6.668518   .2142369    31.13   0.000     6.248581    7.088455
```

Most of the coefficients in the OLS for the ST have the expected signs and are statistically significant. Let us first consider the demographic variables.

- Female headed households have lower monthly expenditure per capita[17].
- The larger the number of adult males and females, the lower are the expenditures. However, the higher the proportion of adults, the larger is the expenditure per capita.
- While age of household head does not have a significant effect, its square has a significant positive effect on expenditure.
- Successively higher educational attainments of a household member are associated with higher expenditure (relative to illiterate or illiterate households).
- When both landowned and its square are considered, the coefficient of the former is positive and significant and that of the latter is negative and significant. These results imply that there is a positive relationship between landowned and expenditure but it weakens with amount of landowned. As shown in an alternative specification, when only landowned is considered, it has a significant negative coefficient, presumably pointing to the non-linearity between log of MPCE and landowned. Using a third specification with landowned dummies, it turns out that the second dummy for the landowned group (i.e. households owning >2.5 ha) has a significant positive coefficient, implying a higher consumption expenditure relative to the nearly landless.

Table 34

Determinants of (log) of MPCE among the ST

(With NSS Region Fixed Effects-Specification 2)

Source	SS	df	MS		Number of obs =	12677
Model	1390.09391	84	16.548737		F(84, 12592) =	137.85
Residual	1511.60089	12592	.120044543		Prob > F =	0.0000
Total	2901.6948	12676	.228912496		R-squared =	0.4791
					Adj R-squared =	0.4756
					Root MSE =	.34647

lmpce30h	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
fem_head	-.0397625	.0119556	-3.33	0.001	-.0631973	-.0163277
ad_female	-.1414308	.0052303	-27.04	0.000	-.1516829	-.1311788
ad_male	-.1050045	.0051372	-20.44	0.000	-.1150742	-.0949347
ad_p_hhsz	.6734563	.0144824	46.50	0.000	.6450686	.7018441
age_h100	-.1222449	.1558025	-0.78	0.433	-.4276416	.1831518
_IagXag	.5242729	.1659571	3.16	0.002	.1989717	.8495741
_Iedu_hr_2	.0925272	.0081685	11.33	0.000	.0765157	.1085386
_Iedu_hr_3	.1692493	.0090471	18.71	0.000	.1515156	.1869831
_Iedu_hr_4	.3339838	.0135133	24.72	0.000	.3074957	.3604718
land_pc	-.0002396	.000115	-2.08	0.037	-.0004651	-.0000142

[17] The dependent variable is log of MPCE which bears a monotonic relationship to expenditure.

_Ihh_type_1	-.1478999	.0182202	-8.12	0.000	-.1836143	-.1121855
_Ihh_type_2	-.336272	.0152628	-22.03	0.000	-.3661894	-.3063546
_Ihh_type_3	-.2131325	.0174322	-12.23	0.000	-.2473022	-.1789628
_Ihh_type_4	-.2079741	.0147564	-14.09	0.000	-.2368989	-.1790492
cons	6.665338	.2158544	30.88	0.000	6.242231	7.088446

- Each of the four occupations has a significant negative coefficient, relative to the default occupational group 'Others'. These results imply that expenditures are lower in all four occupations relative to the default group.
- The overall specification is validated by the F-test.

Largely similar results are obtained for the SC except that (i) age or its square does not have a significant coefficient; and (ii) land has a significant positive coefficient. With the landowned dummies, significant positive coefficients are obtained for both groups, implying higher expenditure relative to the nearly landless. The results for Others differ slightly from those for the SC in as much as age has a significant positive coefficient[18].

For the combined sample, using NSS region dummies and landowned dummies, the following relationships are corroborated: female headed households have lower expenditures; number of adult males and females are inversely related to expenditures; however, the higher the proportion of adults in a household, the higher is the expenditure; age of household head and expenditure are positively related; successively higher educational levels are positively linked to expenditure; land dummies are positively

Table 35

Determinants of (log) of MPCE among the ST

(With NSS Region Fixed Effects-Specification 3)

Source	SS	df	MS	Number of obs =	12677
Model	1416.12049	85	16.660241	F(85, 12591) =	141.20
Residual	1485.57431	12591	.117987	Prob > F =	0.0000
				R-squared =	0.4880
Total	2901.6948	12676	.228912496	Adj R-squared =	0.4846
				Root MSE =	.34349

lmpce30h	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
fem_head	-.0365196	.0118873	-3.07	0.002	-.0598206	-.0132187
ad_female	-.1458088	.0052014	-28.03	0.000	-.1560044	-.1356131
ad_male	-.1071396	.0050961	-21.02	0.000	-.1171288	-.0971505
ad_p_hhsz	.6772319	.0143919	47.06	0.000	.6490217	.7054421
age_h100	-.053477	.1547068	-0.35	0.730	-.3567259	.2497719
_IagXag	.4445442	.1647324	2.70	0.007	.1216436	.7674448
_Iedu_hr_2	.0908525	.0081075	11.21	0.000	.0749605	.1067445
_Iedu_hr_3	.165681	.008971	18.47	0.000	.1480965	.1832656
_Iedu_hr_4	.327812	.0134167	24.43	0.000	.3015133	.3541107
_Iland_opr_2	-.0050379	.0080348	-0.63	0.531	-.0207874	.0107116
_Iland_opr_3	.1843187	.014552	12.67	0.000	.1557946	.2128428
_Ihh_type_1	-.1460602	.0180655	-8.09	0.000	-.1814713	-.1106491
_Ihh_type_2	-.3306799	.0151362	-21.85	0.000	-.3603492	-.3010106

[18] A Chow test of equality of regression coefficients between the ST and SC rejected the null hypothesis of equality of coefficients. In other comparisons (i.e. between the ST and Others, and SC and Others), this test could not be applied as the error variances were significantly different. Details will be furnished on request.

_Ihh_type_3	-.2132142	.0172819	-12.34	0.000	-.2470894	-.1793391
_Ihh_type_4	-.2293802	.0149797	-15.31	0.000	-.2587428	-.2000176
cons	6.674721	.2140268	31.19	0.000	6.255196	7.094246

Table 36

Determinants of (log) of MPCE among the SC
(With NSS Region Fixed Effects-Specification 1)

Source	SS	df	MS		Number of obs	= 13656
					F(89, 13566)	= 91.41
Model	1083.2213	89	12.1710258		Prob > F	= 0.0000
Residual	1806.32112	13566	.133150606		R-squared	= 0.3749
					Adj R-squared	= 0.3708
Total	2889.54241	13655	.211610576		Root MSE	= .3649

lmpce30h	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
fem_head	-.0508027	.0111843	-4.54	0.000	-.0727256	-.0288799
ad_female	-.1236195	.0054727	-22.59	0.000	-.1343467	-.1128924
ad_male	-.0935857	.0052977	-17.67	0.000	-.10397	-.0832014
ad_p_hhsz	.6376645	.0148039	43.07	0.000	.6086467	.6666823
age_h100	.2242663	.1502321	1.49	0.136	-.0702096	.5187421
_IagXag	.1206215	.1563124	0.77	0.440	-.1857725	.4270154
_Iedu_hr_2	.0499462	.0086767	5.76	0.000	.0329386	.0669537
_Iedu_hr_3	.1209648	.0086927	13.92	0.000	.103926	.1380037
_Iedu_hr_4	.2912763	.0124653	23.37	0.000	.2668425	.3157101
land_pc	.1295548	.014855	8.72	0.000	.1004369	.1586727
_Ihh_type_1	-.1440825	.014336	-10.05	0.000	-.172183	-.1159819
_Ihh_type_2	-.283142	.0129015	-21.95	0.000	-.3084307	-.2578533
_Ihh_type_3	-.2014672	.014323	-14.07	0.000	-.2295422	-.1733921
_Ihh_type_4	-.1249639	.013947	-8.96	0.000	-.152302	-.0976259
cons	6.474871	.063755	101.56	0.000	6.349903	6.59984

related to expenditure; occupational categories have negative coefficients, implying lower expenditures relative to the residual occupational group, ‘Others’; controlling for all these effects, the ST and SC have lower expenditures than the ST.

Table 37

Determinants of (log) of MPCE among the SC
(With NSS Region Fixed Effects-Specification 2)

Source	SS	df	MS		Number of obs	= 13656
					F(90, 13565)	= 90.31
Model	1082.66663	90	12.0296292		Prob > F	= 0.0000
Residual	1806.87578	13565	.133201311		R-squared	= 0.3747
					Adj R-squared	= 0.3705
Total	2889.54241	13655	.211610576		Root MSE	= .36497

lmpce30h	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
fem_head	-.047093	.0112078	-4.20	0.000	-.0690619	-.0251241
ad_female	-.129696	.0054801	-23.67	0.000	-.1404378	-.1189542
ad_male	-.0970009	.0053054	-18.28	0.000	-.1074001	-.0866016
ad_p_hhsz	.651524	.014805	44.01	0.000	.6225042	.6805439
age_h100	.1973274	.1504202	1.31	0.190	-.0975171	.492172
_IagXag	.1491395	.1564047	0.95	0.340	-.1574354	.4557145

_Iedu_hr_2	.0490041	.0086805	5.65	0.000	.031989	.0660191
_Iedu_hr_3	.118549	.008709	13.61	0.000	.1014782	.1356198
_Iedu_hr_4	.2872757	.0124842	23.01	0.000	.262805	.3117464
_Iland_opr_2	.0487937	.0081171	6.01	0.000	.032883	.0647045
_Iland_opr_3	.1852517	.0251269	7.37	0.000	.1359995	.2345038
_Ihh_type_1	-.1454319	.0143346	-10.15	0.000	-.1735297	-.1173341
_Ihh_type_2	-.2862174	.0128953	-22.20	0.000	-.311494	-.2609408
_Ihh_type_3	-.2034429	.0143188	-14.21	0.000	-.2315098	-.175376
_Ihh_type_4	-.1377093	.0143741	-9.58	0.000	-.1658846	-.1095341
_cons	6.473848	.0637735	101.51	0.000	6.348843	6.598853

. **Table 38**

Determinants of (log) of MPCE among Others (With NSS Region Fixed Effects-Specification 1)

Source	SS	df	MS	Number of obs	=	52540
Model	5860.4455	91	64.4005	F(91, 52448)	=	388.59
Residual	8692.22348	52448	.165730313	Prob > F	=	0.0000
Total	14552.669	52539	.276987932	R-squared	=	0.4027
				Adj R-squared	=	0.4017
				Root MSE	=	.4071

lmpce30h	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
fem_head	-.0282432	.0062502	-4.52	0.000	-.0404936	-.0159928
ad_female	-.1137751	.0027939	-40.72	0.000	-.1192512	-.108299
ad_male	-.083865	.002691	-31.17	0.000	-.0891393	-.0785907
ad_p_hhsz	.5767235	.0083871	68.76	0.000	.5602848	.5931623
age_h100	.2303908	.0817411	2.82	0.005	.0701775	.390604
_IagXag	.0112727	.0822091	0.14	0.891	-.149858	.1724033
_Iedu_hr_2	.0601008	.0054231	11.08	0.000	.0494715	.07073
_Iedu_hr_3	.1680036	.0051985	32.32	0.000	.1578145	.1781928
_Iedu_hr_4	.3699632	.0063824	57.97	0.000	.3574535	.3824728
land_pc	.1812305	.0048834	37.11	0.000	.1716591	.1908019
_Ihh_type_1	-.1280629	.0069469	-18.43	0.000	-.1416788	-.1144469
_Ihh_type_2	-.3406949	.0070219	-48.52	0.000	-.3544579	-.3269319
_Ihh_type_3	-.2416262	.0081525	-29.64	0.000	-.2576051	-.2256473
_Ihh_type_4	-.1535421	.0063327	-24.25	0.000	-.1659542	-.14113
cons	6.544389	.049196	133.03	0.000	6.447965	6.640814

Table 39

Determinants of (log) of MPCE among Others (With NSS Region Fixed Effects-Specification 2)

Source	SS	df	MS	Number of obs	=	52540
Model	5798.25515	92	63.0245125	F(92, 52447)	=	377.57
Residual	8754.41382	52447	.166919248	Prob > F	=	0.0000
Total	14552.669	52539	.276987932	R-squared	=	0.3984
				Adj R-squared	=	0.3974
				Root MSE	=	.40856

lmpce30h	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
fem_head	-.0267623	.006281	-4.26	0.000	-.039073	-.0144516
ad_female	-.1296163	.0028023	-46.25	0.000	-.1351088	-.1241238
ad_male	-.0971218	.0027008	-35.96	0.000	-.1024154	-.0918283
ad_p_hhsz	.6279939	.0083803	74.94	0.000	.6115685	.6444193
age_h100	.2580043	.082169	3.14	0.002	.0969524	.4190562
_IagXag	.0062915	.082614	0.08	0.939	-.1556326	.1682156
_Iedu_hr_2	.0596361	.005444	10.95	0.000	.0489658	.0703063

_Iedu_hr_3	.1655868	.0052276	31.68	0.000	.1553406	.175833
_Iedu_hr_4	.365555	.0064322	56.83	0.000	.3529478	.3781623
_Iland_opr_2	.0585161	.0046399	12.61	0.000	.0494218	.0676103
_Iland_opr_3	.2607375	.0083266	31.31	0.000	.2444173	.2770577
_Ihh_type_1	-.1268324	.0069732	-18.19	0.000	-.1404999	-.1131649
_Ihh_type_2	-.3466376	.0070465	-49.19	0.000	-.3604489	-.3328263
_Ihh_type_3	-.2426462	.0081863	-29.64	0.000	-.2586914	-.226601
_Ihh_type_4	-.1632168	.0066756	-24.45	0.000	-.1763011	-.1501325
_cons	6.524527	.0493781	132.13	0.000	6.427745	6.621308

Table 40

Determinants of (log) of MPCE (Combined)
(With NSS Region Fixed Effects)

Source	SS	df	MS	Number of obs	78873
Model	9106.21968	94	96.8746775	F(94, 78778)	618.20
Residual	12344.7668	78778	.156703226	Prob > F	0.0000
Total	21450.9864	78872	.271972138	R-squared	0.4245
				Adj R-squared	0.4238
				Root MSE	.39586

lmpce30h	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
fem_head	-.0311365	.0050173	-6.21	0.000	-.0409704	-.0213026
ad_female	-.130931	.0022765	-57.51	0.000	-.135393	-.126469
ad_male	-.0994513	.0021975	-45.26	0.000	-.1037583	-.0951442
ad_p_hhsz	.6377552	.0066121	96.45	0.000	.6247956	.6507149
age_h100	.2304805	.065477	3.52	0.000	.1021459	.3588151
_IagXag	.0650548	.0666305	0.98	0.329	-.0655405	.1956502
_Iedu_hr_2	.0620201	.0041161	15.07	0.000	.0539527	.0700875
_Iedu_hr_3	.160672	.004037	39.80	0.000	.1527595	.1685845
_Iedu_hr_4	.3577853	.0051761	69.12	0.000	.3476402	.3679304
_Iland_opr_2	.0515353	.0036355	14.18	0.000	.0444098	.0586608
_Iland_opr_3	.2537464	.0069641	36.44	0.000	.2400968	.267396
_Ihh_type_1	-.1307545	.005849	-22.35	0.000	-.1422185	-.1192904
_Ihh_type_2	-.3247868	.0056245	-57.74	0.000	-.3358108	-.3137628
_Ihh_type_3	-.23343	.0064624	-36.12	0.000	-.2460963	-.2207638
_Ihh_type_4	-.1632759	.0055609	-29.36	0.000	-.1741752	-.1523766
_Isocial_g~1	-.1629194	.0053633	-30.38	0.000	-.1734315	-.1524073
_Isocial_g~2	-.0967174	.0036994	-26.14	0.000	-.1039682	-.0894665
_cons	6.547668	.0366283	178.76	0.000	6.475877	6.619459

As expected, the actual and predicted (log) of per capita expenditures are close. The predicted expenditure for the ST is 5.98, for the SC 6.10 and 6.31 for Others. As the actuals are identical up to two decimal points, these are not reported.

Between Others and the ST, the differences in characteristics account for a little over 50 per cent of the disparity in expenditure, implying a nearly equal contribution of structural differences. Between Others and the SC, however, the relative contributions differ considerably with the characteristic component accounting for 60 per cent of the disparity in expenditures.

Disaggregation of the characteristic component between Others and the ST reveals that the largest contributor is location, followed by education and then occupation. The structural component, on the other hand, is largely made up of locational differences, followed by demographic, and landowned differences[19].

[19] No comment is made on the structural differences due to differences in the intercept.

Table 41

Decomposition of Inequality in Expenditure

Variables	Difference in Characteristics (Others and ST)	Structural Differences (Others and ST)	Difference in Characteristics (Others and SC)	Structural Differences (Others and SC)
Demographic	-1%	34%	-4%	-16%
Education	32%	-3%	34%	27%
Land	-1%	29%	23%	6%
Occupation	26%	12%	45%	-39%
Region	45%	125%	2%	65%
Intercepts		-98%		57%
Difference in Predicted (log) Expenditure Per Capita	0.17 (100%)	0.15 (100%)	0.12 (100%)	0.08 (100)

Between Others and the SC, occupation was the largest contributor to the characteristic component, followed by education and then land. The structural component, on the other hand, is attributable largely to locational and educational differences, offset partly by the negative effect of occupational differences.

In sum, as in the case of poverty decomposition, the relative contributions of characteristics and structural components of disparity in living standards vary between the ST and Others, and between the SC and Others. Within each component, location, occupation and education mattered a great deal, while their relative importance varied with the social group[20].

Discrimination, Identity and Deprivation

[20] These results are not dissimilar to those reported in Kijima (2006).

Although conclusive evidence on discrimination is not found, it cannot be ruled out in view of large differences in characteristics (e.g. human capital, physical capital, occupations) and returns to them between the two disadvantaged groups-especially the ST. A brief review of alternative conceptualizations of discrimination offers insights into how it could be addressed.

In an important measure of discrimination-referred to as statistical discrimination- under some circumstances, employers use the average quality of a given race/caste/ethnic group to predict the quality of individuals of that group (Arrow (1972). A difficulty, however, is that in such a model there is no incentive for self-improvement, since all members of the group in question are judged the same and therefore paid the same wage irrespective of individual merit. Thus prejudice produces lower level equilibrium trap.

A strikingly different formulation is due to Becker (1969) in which discrimination is explained by tastes. Any individual with positive taste for discrimination receives positive economic rewards for reducing this taste. Hence discrimination persists *despite* economic incentives. In contrast, in Arrow's model, discrimination exists at least partially because of economic incentives.

Akerlof (1976) proposed an insightful model of caste equilibrium in which caste customs are obeyed, yet no single individual, by behaving differently, can make himself better-off. As long as most persons have positive utility for adhering to social customs and as long as activities are pursued up to the point where marginal benefits equal marginal costs, there will be rewards to breaking social customs if they fail to promote economic efficiency. However, without ruling out deviant behaviour, Akerlof (19760 conjectures that usually the returns are greater to those who do not break social customs. As he states, "In a segregationist society, such persons discriminate; in a caste society, they follow the caste code". As a result, social customs endure and the caste equilibrium is maintained.

In a more recent and richer formulation, Akerlof and Kranton (2000) focus on identity-related behaviour and how it influences economic outcomes. The building blocks are: (i) people have identity-based payoffs derived from their own actions; (ii) people have identity- based payoffs derived from others' actions; (iii) third parties can generate changes in these payoffs; and (iv) some but not all individuals can choose their identity. In a poor and socially excluded community, some will identify with the dominant culture, while others reject it and the subordinate position assigned to those of "their race, class or ethnicity" (Ackerlof, 2000, p. 85). The former engage in remunerative activities (in line with the dominant culture) and the latter "engage in self-destructive behaviour" manifesting in "Taking drugs, joining a gang….." (p.85).This is not just typical of persistent pockets of poverty (e.g. black ghetto poverty) but also offers a less monolithic view of poverty than current economic theories that emphasise conformity.

In the formal and more general model, there are two activities, one is 'working' and the second is 'not working'. As for identity, there are two social categories, one with a preference for the first activity and another with a preference for the second. Each person chooses an identity and activity, given the choices of everyone else in the community. Individuals choose an identity and activity to maximize expected payoffs, given the

probabilities of encounters with the first group who choose the first activity, those from the same group who choose the second, those from the second group who choose the first activity, and the remaining who choose the second. Different equilibria show how social interaction within the community and social exclusion from the dominant community determine the prevalence of groups that choose not to conform and choose the second activity. Note that the non-conformist or 'self-destructive' behaviour is not irrational but "derives from low economic endowments and a high degree of social exclusion" (Akerlof and Kranton, 2000). In general, the greater the social exclusion, the greater the possibility of equilibria in which individuals forego remunerative activities. How caste salience and mistrust affect performance of those at the lowest rung of social hierarchy is elaborated below.

Beliefs, Identity and Opportunity

Recent work has drawn pointed attention to the role of culture in perpetuating inequality and deprivation. Specifically, even after coercive structures underlying subordination of one group by another are dismantled, the cultural beliefs remain intact and inequality persists. To illustrate, deep economic divides persist between blacks and whites in the United States, between untouchable castes and other castes in India, and between indigenous and non-indigenous groups in Asian and Latin American countries. As noted earlier, there are several links between belief systems and persistent inequality – one is statistical discrimination: under some conditions, employers' prior beliefs in group differences (where none exist) are self-fulfilling. Another is stereotype threat or social identity susceptibility. Specifically, when a particular social identity is made salient, performance is altered in the direction predicted by that stereotype. Two recent papers, Hoff and Pandey (2005) and Hoff et al. (2005), offer persuasive experimental evidence from Uttar Pradesh (UP) to illustrate the *self-fulfilling* nature of the belief system of socially inferior groups/castes. As individuals from such groups believe that their efforts will be judged in a biased way, their motivation to perform well is weak. So making social identity salient would have a larger effect on behaviour when the evaluation is discretionary, relative to a non-discretionary evaluation. No such difference would be observed for the social group that is not stigmatised.

Two sets of results are reported. In the first experiment, low-caste and high caste junior high school male students in UP are asked to solve mazes under various incentive schemes. In some cases, caste is made salient through a public announcement of the children's caste. When this happens, the performance of low–caste children is significantly worse-both relative to their own performance when their social identity is not revealed and relative to the performance of the high caste.

The second experiment focuses on the role of mistrust. A condition is devised that manipulates the scope for judgment in rewarding performance. When the subjects were asked to accept or reject a gamble in which there was no scope for judgment by the evaluator, making caste salient did not result in a caste gap. But in other cases of discretionary evaluation, making caste salient has a significant effect.

Are these experimental results generalisable to adult behaviour? Hoff and Pandey (2005) argue that they are. They draw attention to growing experimental literature that confirms similarity between the behaviour of 11 and 12 year olds and adults in various domains (e.g. rational choice, altruism, and strategic behaviour). If, for example, 12 year old boys' social sensibilities about caste are well developed, the experiment need not perfectly mirror the world, as long as it illustrates a particular kind of behaviour. By controlling the environment, the experiment helps in isolating the impact of caste.

These results highlight that historical roots of deprivation –as in the case of the SC and ST in India-shape expectations that contribute to the persistence of group inequality. The legacy of past prejudices and deprivation perpetuate subordination of some groups. A low caste individual is more likely to submit to the authority of the high caste if he believes that others will do so, too. A high- caste person is more likely to exercise that authority if he believes that the low-caste will submit. Thus a shared system of beliefs stabilises and coordinates expectations, and contributes to reproduction of inequality over time.

The policy implications of these results are noteworthy. If lower performance of the SC and ST is not only due to discrete or remediable economic factors (e.g. lower human and physical capital) but also shaped by a historical legacy of discrimination and isolation, creation of new opportunities may not mitigate their deprivation. History cannot be reversed and social identity cannot be suppressed. In fact, recent social and political movements have asserted identity to gain self-confidence. On the other hand, social and spatial segregation have diminished, and individual anonymity has grown. A campaign to change expectations (e.g. a case in point is a massive training programme in participatory governance in Kerala, initiated by a coalition government of left parties in 1996) along with improvement in quality of education-especially school education- and better infrastructure in remote and inaccessible areas are a high priority.

Mandated Representation

Does Correction of Imbalances in Political Agency Result in Correcting Other Inequities?

Two sets of evidence are reviewed below-one at the state level, and the other at the village level.

Quotas for Women, SC, and ST in Village Councils (Panchayats)

The 73rd Constitutional Amendment in 1992 was a landmark legislation as it established a three-tiered Panchayat system with regular elections throughout India. It gave the Gram Panchayat (the village Panchayat or GP) primary responsibility for implementing development programmes as well as for identifying local needs. More significantly, this Amendment provided that one third of the seats in all Panchayat councils, as well as one-third of the Pradhan (Head) positions must be reserved for women. Similar quotas are also mandated for the two disadvantaged minorities in India, Scheduled Castes and

Scheduled Tribes (SC and STs), proportional to each minority's population share in each district.

In West Bengal, the Panchayat Constitution Rule was modified in 1993 so as to reserve one-third of the councillor positions in each GP to women, and a share equal to their population for the SCs and STs; and in a third of the villages in in each GP, only women could be candidates for the position of councillor for the area. To conform to the 73rd Amendment, the Panchayat Constitution Rule was again modified in April, 1998, to introduce reservation of Pradhan positions for women and the SCs and STs. In Rajasthan, the random rotation system was implemented in 1995 and in 2000 at both levels (council members and Pradhans)[21].

In an important contribution, Chattopadhyay and Duflo (2004) demonstrate that these quotas had significant effects on the provision of public goods. The analysis is based on data collected from Birbhum district in West Bengal and Udaipur in Rajasthan. An innovative feature of the analysis is that it takes advantage of the randomised control.

Let us first examine some descriptive statistics.

Table 42
Representation of Women and SCs

	Reserved for Women (1)	Unreserved for Women (2)
A. Women's reservation and women's representation		
West Bengal		
Total Number	54	107
Proportion of female pradhans (%)	100	6.5
Rajasthan		
Total number	40	60
Proportion of female pradhans (%)	100	1.7
B. SC Reservation and SC representation	Reserved for SC	Non-reserved for SC
West Bengal		
Total number	55	106

[21] In both West Bengal and Rajasthan, a specific set of rules ensures the random selection of GPs where the office of Pradhan was to be reserved. All GPs in a district are ranked in consecutive order according to their serial legislative number. GPs that have less than 5 per cent SCs (or STs) are excluded from the list of possible SC(or ST) reservation. Random numbers are used to determine the seats that are to be reserved for SCs and STs, according to the numbers that need to be reserved in these districts. They are then ranked in three separate lists, according to whether or not the seats had been reserved for a SC, for a ST, or are unreserved. Using these lists, every third GP starting with the first on the list is reserved for a woman Pradhan in the first election.

Percentage SC	100	7.5

Source: Chattopadhyay and Duflo (2004). Note that the analysis was confined to SC as all GPs in Birbhum had more than 5 per cent SC, so that no GP was excluded from being reserved.

Comments

- In both districts, all Pradhans in GPs reserved for a woman are female. In West Bengal, only 6.5 per cent of the Pradhans are female in unreserved villages. In Rajasthan, only one woman was elected on an unreserved seat. Women elected once were not re-elected.
- In Panel B, the reservations dramatically increased the number of SC Pradhans in reserved areas.

Effects of Reservations for Women

- In West Bengal, the percentage of women among participants in the gram samsad (the village assembly) was significantly higher when the Pradhan was women (rising from 6.9 per cent to 9.9 per cent). This is consistent with the view that political communication is facilitated if the citizens and leaders are of the same sex.
- Women in villages with reserved Pradhans are twice as likely to have addressed a request or a complaint to the GP Pradhan in the previous six months.
- In Rajasthan, however, the fact that the head is a woman had no effect on women's participation in the gram sansad or the number of women's complaints.
- In West Bengal, drinking water and roads were by far the issues most frequently raised by women. The next most important issue was welfare programmes, followed by housing and electricity. In Rajasthan, drinking water, welfare programmes, and roads were the most frequently raised issues by women. The issues most frequently raised by men in West Bengal were roads, irrigation, drinking water, and education.
- In both West Bengal and Rajasthan, the gender of the Head affects the provision of public goods. In both places, there were significantly higher investments in drinking water in GPs reserved for women. This is not surprising as women complained more often than men about water. This finding supports the view that quotas for women had significant effects on the provision of public goods. It is emphasised that, despite the handicaps that women face in terms of education and prior experience, they have a real impact on policy decisions.

Effects of Reservations for SCs

- In contrast to the earlier results, the differences in the provision of public goods are not significant. Unlike women, SC Pradhans do not alter the type of investments. But there are locational effects. Overall, across all goods, and controlling for the difference in population share, the SC hamlet received 14

per cent more investment in goods in GP reserved for SCs, compared to non-reserved GPs. (Note that the head's village was excluded). Also, the share of goods going to the SC hamlet increases for all goods, and it increases more for goods for which the share is already higher in non-reserved villages (e.g. sanitation). The conclusion, therefore, is that SC Pradhans do not change the types of goods provided but a little more of everything.

Related Issues

In a subsequent piece, Duflo (2004) raises three analytical concerns for these results to hold: (i) the preferences of disadvantaged groups must differ; (ii) the identity of the policy maker must affect the distribution of public goods, and policy makers favour members of their groups; and (iii) without representation, members of disadvantaged groups must be underrepresented. Let us review the evidence given in Duflo (2004) and elsewhere.

(a) Preferences

- Preferences of men and women, and SC and ST differ. Women and men were concerned about very different types of public goods. For example, in 31 per cent of the sampled villages in West Bengal, women asked a question about drinking water, but only in 17 per cent of the villages did men ask such a question in the issues raised with the Head of a GP. Women also asked questions about roads more frequently than men did (31 per cent versus 25 per cent). Conversely, 12 per cent of the men asked about education, but only 6 per cent of the women did (somewhat intriguing!). In Rajasthan, 54 per cent of the women and 43 per cent of the men asked about water. In contrast, 13 per cent of the women and 23 per cent of the men asked about roads. A gap here is why preferences of the SCs and STs were not elicited.

(b) Leader's Group Identity

- Besley et al. (2004) report that reservation of a leadership position in GP for a SC or ST increases (by about 7 percentage points) the chance that an SC or ST household in that village would have access to a toilet, an electricity connection, or a private water connection through a government scheme. Chattopadhyay and Duflo (2004), on the other hand, report that, out of all repair or construction of public goods in a village, the share allocated to SC hamlets was on average 11 per cent larger when the village was located in a hamlet reserved for the SCs, and this effect is statistically significant.
- If the issues raised with GP are a reasonable proxy for women's and men's preferences-arguably, they are not- then one would expect that there is more investment in water and roads in GP reserved for women. As summarised above, this is indeed the case in West Bengal. Subject to some caveats, these results corroborate that the group identity of the head matters.

(c) Under-Representation of Disadvantaged Groups

- An issue is whether in the absence of reservation disadvantaged groups would be underrepresented. Duflo (2004) is emphatic that this is likely to be the case on the basis of the following evidence: (i) Very few women, SCs or STs are elected without reservations. In the GP in the two districts in West Bengal and Rajasthan that were not reserved for women, 6.5 per cent and 1.7 per cent of Pradhans were women, respectively. In West Bengal, 7.5 per cent of the GP not reserved for SCs had a SC Pradhan. Another factor is whether or not political parties will field candidates from disadvantaged groups. In West Bengal, 26 per cent of women say that they will run "if their party asks them". As it turns out, their party is not likely to ask women, the SCs or STs to run for unreserved seats[22].
- Is this because women and minorities are unlikely to perform well? In another study (Topalova and Duflo, 2004), the results for West Bengal and Rajasthan are replicated for the whole of India. Specifically, there are significantly more public water sources available when the GP is reserved for women. Overall, women provide more public goods, and those goods are of better quality. Despite this, villagers were less satisfied with the performance of female leaders than with that of male leaders (Overall, villagers -both male and female respondents- were less satisfied about the public goods in question when the leader was female). There is thus a 'cultural ' barrier to women being recognised as competent policy makers (or, alternatively, due to a difficulty in controlling for some of the unobserved differences in how female leaders functioned, given their lower educational attainments, limited experience and negotiating skills).

(d) Do Reservations Affect the Functioning of the Political System?

- Does the fact that the voters are forced to choose from a smaller pool of candidates (with mandatory quotas) affect the functioning of the system? Besides, the costs are likely to be higher if the candidates from disadvantaged groups lack education and relevant experience. Duflo (2004), however, invokes an earlier result about the quality of public goods provided being better under female leaders elected of reserved seats. On the issue of Pradhans whose seat is reserved at the next election acting as a "lame duck", Dufflo (2004) asserts that lame duck incumbents do not appear to behave differently from others. This is rationalised on the ground that lame ducks were as likely to plan on running again as those who were not. If this implies that the lame ducks were unaware or ignorant of the constraints, this is somewhat naïve. Finally, whether the quotas helped prevent capture by local elite needs further validation.

(e) Caveats

Reservations for both women and SCs make a difference. Both women and SCs seem to invest more in what women and SCs want (water for women, goods in SC hamlets for

[22] Pande (2003) shows that, if a candidate's identity matters for public allocation, then political parties where minorities are under-represented will also tend to field a small number of minority candidates.

SCs). It follows therefore that mandatory quotas influence provision of local goods. Or, more generally, correction of imbalances in political agency corrects inequities in other spheres (Sen, 1999).

Some caveats are in order. First, the degree of flexibility assumed under various programmes (e.g. Jawahar Rozgar Yojana) is contentious. Complete flexibility applies to a tiny fraction of resources raised by GPs through their own taxes/levies. Secondly, the construction of public goods through interviews of villagers and others is suspect-especially if the first caveat holds. Thirdly, some of the results are implausible or inconsistent (e.g. road quality in GPs reserved for women in West Bengal, but the opposite in Rajasthan). Whether this is consistent with the complaints made by women misses the point that it does not explain why the quality is lower in the latter, relative to unreserved villages. A related issue is whether complaints capture fully women's priorities. Here the findings of Hoff et al. (2005) are illuminating.

- Barely 5 or 6 per cent of women in each caste group complain against health or ICDS workers for negligence.
- It is significant that more than half of those who do not complain say that it is because "I am not really bothered by this". Additional reasons for not complaining-especially by the low caste – are that "it would make no difference" or "it might cause trouble for me to raise questions".
- The vector of response of the low caste is significantly different from that of the high caste (p=.03).
- Over 90 per cent of women in each caste group are of the view that others in their neighbourhood also take no action.
- Similar views are reported about education services despite rampant absenteeism of school teachers.
- In general, women do not expect these institutions to deliver services and this is virtually common knowledge.

Hoff et al. (2005) conclude that "large components of the population remain outsiders to decision-making in the village, and the village government is not held accountable for poor services: high teacher absenteeism, non-delivery of health and child services, and underprovision of rations to SC households and children under nationally mandated programmes" (p.40). Low expectations of institutional change, economic inequality and educational backwardness sustain poor quality of services[23]. So there is a risk of overstating the roles of decentralised power and mandated representation by disadvantaged groups in raising their well-being[24].

[23] Institutions are path dependent as expectations associated with the past equilibria serve as a focal point for the selection of a strategy in a subsequent situation. Oligarchy, for example, could be perpetuated simply by expectations that individual citizens are powerless (Hoff et al. 2005).

[24] Even though the evidence comes from a village in Uttar Pradesh, the rich and insightful analysis is persuasive.

Table 43
Actions Taken by Women if the Health Worker or ICDS Worker Does Not Perform Duties, by Caste

Actions	Low caste N=60	Middle caste N=70	High caste N=35	Low vs High Caste p-value	Middle vs High Caste p-value	Low vs Middle Caste p-value
If the health worker or ICDS worker does not perform her duties fully, have you complained to anyone about these problems, have you complained to anyone about these problems ? (% who say yes)	5	6	6	0.88	0.98	0.86
If no, why haven't you complained?	50	55	65			
I am not really bothered by this	29	19	10			
It would make no difference	10	6	5			
It might cause trouble for me to raise questions	10	18	14	0.03	0.29	0.31
I don't know how	1	2	6			
NA (since no eligible child in the house)						
Have others in your neighbourhood ever tried to do something about any such problems that they face? (% who say yes)	7	3	2	0.11	0.08	0.0

Source: Hoff et al. (2005).

Finally, it is not clear why what SCs complain about most is not discussed to match actual allocations in SC GPs.

Quotas for Women, SC, and ST in State Legislatures

Whether mandatory reservations in state legislatures influence policies is examined in another recent contribution (Pande, 2003).

The Indian constitution mandates political reservation in favour of scheduled castes and scheduled tribes in every state. In addition, it directs state governments to use public policy to improve the well-being of these two groups.

The reservation for a group reflects the group's population share in the state. However, revision of these quotas is carried out only after a new census estimates become available. Thus, while a group's population share varies continuously, the reservation changes with a lag. The author exploits this institutional feature to identify the effect of quotas on policy outcomes. Or, more specifically, it allows the author to disentangle the effects of changes in the political representation for a group from those due to changes in its population share.

Views on the efficacy of political representation through quotas differ. One sceptical view is that, since SC and ST legislators have to lobby with both upper-caste constituents in reserved jurisdictions and with the primarily upper –caste membership of party committees, they have little autonomy in pursuing their policy preferences or agenda. A contrary and more optimistic view is that minority legislators act *en bloc*, and, as a consequence, succeeed in pursuing their own agenda. Given such a divergence of views, Pande's (2003) analysis makes a valuable contribution through a rigorous econometric analysis, based on a model of political competition with limited policy commitment. The author claims that her findings supporting quotas as a redistribution tool are consonant with the view that complete political commitment is absent from democracies. So a candidate's personal "ideology" is a key determinant of observed policy outcomes.

Identification of Scheduled Castes and Tribes

The 1950 constitution established state-specific lists which identified the castes and tribes that fall in the categories of Scheduled Castes (SCs) and Scheduled Tribes (STs), respectively. These were based on the criteria listed below in Table 45.

Table 45
Legal Identification of Scheduled Castes and Scheduled Tribes

Selection Criteria for Scheduled Castes
1.Cannot be served by clean Brahmins
2. Cannot be served by the barbers, water carriers, tailors, etc. who serve the caste Hindus
3. Pollutes a high caste Hindu by contact or by proximity
4. Is one from whose hands a caste Hindu cannot take water
5. Is debarred from using public amenities such as roads, ferries, wells, or schools
6. Will not be treated as an equal by high-caste men of the same educational qualification
7. Is depressed on account of the occupation followed and, but for that, occupation would subject to no social disability
Selection Criteria for Scheduled Tribes
1. Tribal origin
2. Primitive ways of life and habitation in remote and less accessible areas
3. General backwardness in all respects

Source: Pande (2003)

The economic backwardness of the SCs is traceable to the caste system. Members are traditionally assigned to menial occupations such as skinning animal carcasses and removing human waste, and faced restrictions on asset ownership. By contrast, the backwardness of the STs is attributable to their geographic isolation, and dependence on traditional agricultural practices for subsistence[25].

Data

The analysis is based on a state panel data set for 16 major states over the period 1960-92. In the sample, the average SC reservation was 13 per cent, and the ST reservation was 7 per cent. In the analysis carried out, two types of policies are distinguished: general and targeted. The first refers to policies not restricted to the SCs and STs, and the second to those explicitly targeted to them. In the general category, the items included are (i) state government expenditure, (ii) education expenditure, and (iii) land reform. The second category of targeted policies includes (i)fractions of state expenditure devoted to SC and ST welfare schemes (e.g. group housing projects, provision of public goods in SC and ST hamlets), and (ii) job quotas (or, fractions of state government jobs reserved for SCs and STs). The mean fraction of jobs so reserved was 20 per cent. A regression analysis yields the following results[26]:

- Increases in ST reservation raise state expenditure.
- ST reservation, however, has a significant negative effect on educational expenditure. This is somewhat intriguing given the low levels of literacy among the ST.

[25] STs have limited access to markets and other infrastructure such as health care facilities, road connections and electricity, communication facilities, irrigation. As a result, most of the ST migrate seasonally to make ends meet (Kijima, 2006).
[26] For details of the specification used, see the Annex.

- Higher numbers of SC and ST legislators do not have any effect on land reform legislation.

Besides, there is a significant relationship between SC and ST reservations and targeted policies.

- There is a positive correlation between SC reservation and job quotas. A 1-per cent increase in SC reservation is associated with a 0.6 per cent increase in job quota. However, ST reservation does not have a significant effect on job quotas.
- ST reservation has a significant effect on ST welfare spending. The estimates suggest that a one point increase in ST reservation increases the share of ST welfare spending by 0.8 percentage points.

Is there an explanation of these differences? Pande (2003) offers the following explanation: relative to ST, SC individuals are both more educated and geographically more dispersed. Hence, their relative returns from individual-specific policies, such as job quotas, are higher. On the other hand, relative to SC, the benefits to ST from geographically localised welfare programmes such as housing are greater. It is further emphasised that increases in SC current population shares are associated with increases in job quotas and reductions in ST welfare spending. These findings are claimed to be consistent with differences in the political activism of the SC and ST. In general, it is believed that, while the SC are an important political block, the ST remain politically marginalised. However, more can be said on the basis of other evidence, as discussed below.

As argued and elaborated below, some key questions remain unresolved. Specifically, we need to examine why inequities persist between the SCs and STs, on the hand, and between the SCs and STs, and Other, on the other. Whether correction of imbalances in political agency corrects other inequities may in fact be conditional on the nature of the political regime, social mobilisation and group identity of the disadvantaged.

Political Regime, Social Mobilisation and Group Identity

Not just legislative measures but also their interaction with socio-political and economic forces matters. These are unlikely to be captured through state or year fixed effects. This is illustrated through an analysis of land distribution. Mohanty (2001) reviews (i) the legislative measures enacted for the protection and promotion of land rights of SC and ST, and their achievements; (ii) the changes in land distribution among them; and (iii) the factors that have impeded improvements in their landownership.

(a) Legislative Measures

- In several states the measures undertaken are far from adequate. Specifically, there are provisions restricting land transfers from scheduled groups to non-scheduled groups without the approval of the competent

authority (i.e. collector, sub-divisional officer, among others). Not only does it reinforce the dominance of the bureaucracy but also fails to act as a barrier for the rich upper caste[27].

- In Andhra Pradesh, Bihar, Gujarat, Karnataka, Madhya Pradesh and Maharashtra, land alienation among the tribals is considerably higher both in terms of area and number. While in Rajasthan 29 per cent of registered land alienation cases were decided in favour of tribals, in Orissa it was 31 per cent. Moreover, many of the land alienation cases were also unreported and unregistered (Mohanty, 2001)[28].
- Measures allotting land to the SCs and STs are also inadequate. Each state has its own ceiling, and its own priority list for distributing surplus land. Moreover, in several states, a significant proportion of land declared surplus has not been taken possession of. In Karnataka, for example, only 59 per cent of the surplus land area has come under possession. Although national guidelines stipulate that 50 per cent of the land to be distributed should be given to SC and ST households, the distribution patterns in Tamil Nadu, Rajasthan, Punjab and Maharashtra, among others, reveal a strong bias in favour of non-scheduled groups.

In sum, inherent loopholes and ambiguities in the legislative measures, bureaucratic inefficiency, lack of updated land records, and ignorance of SC and ST beneficiaries have come in the way of land transfers.

(b) Land Distribution

- The distribution of area operated during 1980-81 and 1990-91 shows little improvement. At the all-India level, the share of the SCs in area operated rose slightly- from 7.03 per cent in 1980-81 to 7.90 per cent in 1990-91, while that of the STs rose from 10.20 per cent to 10.80 per cent. Among the latter, there were slight reductions in the share of operated area in Bihar-from 16.25 per cent to 16.10 per cent- and in Orissa-from 29.90 per cent to 28.70 per cent. Although Kerala and West Bengal did record slightly higher shares, the increase was small. The SCs, by contrast, did better in a few states (Karnataka, Tamil Nadu, Maharashtra, and UP).
- Mohanty (2001) points to the role of the political regime at the state level, and its interaction with socio-political and economic forces[29]. While the evidence is not conclusive, it helps understand better outcomes in a few states. Bihar's performance, for example, has been dismal. This is attributable to a feudal social structure, and its reflection in state politics; a legal system that is heavily tilted against the disadvantaged; and weak organisation of the SCs and

[27] In Maharashtra, for example, land could be leased out if the government is satisfied that the owner is physically incapable of tilling it. Many big landowners in fact faked medical certificates to lease-in land for a fixed period and did not restore it to the tribals (Mohanty, 2001).

[28] There are a number of villages in tribal Orissa, where all the villagers are landless. For example, the entire land in a village in Koraput district is owned by a Keralite who operates a business firm in Thiruvananthapuram and the management of the land is left to a non-tribal middleman (Mohanty, 2001).

[29] For a synoptic view, see Mohanty (2001).

STs. By contrast, Tamil Nadu did better as the dominance of upper castes was challenged. The DMK –a regional party- successfully mobilised the lower castes against the upper castes. Karnataka is yet another interesting case where the *Dalit* movement challenged their oppressors. In fact, it turned out to be the strongest and longest-lasting Dalit movement in the country. Similarly, Maharashtra's superior performance is attributed to the organisation of lower castes and tribal movements. If their achievements have been limited, an important reason has been the resistance from upper castes. It follows therefore that legislative measures are of no consequence in the absence of a political regime that identifies itself with the disadvantaged groups, and the latter are well-organised to assert their legitimate demands[30].

(c) Group Identity

Not only do the provisions in the Constitution vary for the SC and ST, it is argued that there are specific reasons why their group identities are different (Xaxa, 2001).[31]Specifically, the ST have played a second fiddle to the SC in taking advantage of the resources granted to them, whether it is education, science and technology or civil service and politics. First, let us consider a few facts.

- In terms of overall literacy, the SC have fared better than the ST. According to the 1991 Census, the literacy rate among the SC was 37.4 per cent , as against 29.6 per cent among the ST. Also, performance at different levels matters. One indicator is drop-out rate. In classes I-X, the drop –out rate among the ST was 86 per cent, as against 80.58 per cent among the SC.
- The reasons for reservations also differed for the two groups. The SC were accorded reservations as they were usually segregated from the dominant community and subjected to all forms of disabilities and discrimination. The ST, on the other hand, were given reservations as they lived in isolation from the dominant community in remote, inaccessible areas. The SC have had greater exposure to the larger society as compared to the ST. Although the opportunities open to the larger society or the upper castes in the form of knowledge, information and technology, and employment were also in sight for the SC, they were denied access to them. By contrast, such opportunities did not exist for the ST because of their isolation from the mainstream in all its manifestations- customs, traditions and values.
- Although exposure of the STs has grown over the years, an explanation for the relative disparity between the SC and ST must go beyond limited exposure of the latter. Xaxa (2001) argues that it lies in the

[30] In such states, atrocities against the SC and ST are fewer and less violent (Mohanty, 2001).

[31] In fact, there are more provisions for ST than for SC. The Articles 15 (4), 16 (4), 19 (5), 23, 46, 330, 332, 334, 335, 338 are common to both. Articles 29, 164, 244, 244 (A), 275 (1), 339 (1), 339 (2) pertain only to the Scheduled Tribe only. Besides, there are Articles 371 (A), 371 (B) and 371 (C0, which are in force only in the north-eastern region (Xaxa, 2001).

social structure of the ST. (i) Tribal societies are typically small and marked by homogeneity[32]. A lack of heterogeneity in terms of social division of labour, occupation, skill, class, access to power has the consequence that there is no reference group to emulate. (ii) There is nothing like tribal identity at the pan-India level. If there is an identity of any kind, it is confined to a locality or a region. Moreover, such an identity is more at work at the political or interest articulation level than at the social or cultural plane. But more importantly even when this occurs it is less assertive than among the SC. The SC, by contrast, have had reference points within the system (i.e. the upper caste) as also within their own category both at the regional and national levels. (iii) Collectivity and not individuality remains the hallmark of tribal societies. Hence the principle of individual excellence is not valued much. (iv) It is therefore not surprising that the Constitutional provisions created opportunities that benefited the SC more than the ST.

- Another distinct but related issue is that both within the SC and ST some groups fared better than others. Among the SC, for example, the *Mahars* of Maharashtra or *Chamars* and *Jatavs* of north India fared better than others. Similarly, among the ST, the *Minas* of Rajasthan, *Mizos* of Mizoram, *Khasis* of Meghalaya, for example, have performed better. What seems to account for the superior performance of the *Minas*, for example, is the differentiation among them depending on their geographical spread, nature of intermingling with caste groups (e.g. *Jats, Ahirs*), and occupational choice. As landlords/*Zamindars*, for example, they were a privileged group; interacted more frequently with state authorities; and, as a result, were in an advantageous position to benefit from mandatory reservations.

In sum, these are some of the structural elements that help understand better the disparity between the SC and ST, as also within each category.

Overlapping Gender and Caste Identities

Do low caste women suffer the double burden of material deprivation –as women and as members of lower castes? A recent study (Deshpande, 2007), based on a comparative analysis of NFHS-1 and NFHS-2, confirms this. Besides, it also sheds light on whether liberalisation of the Indian economy has restricted the disparity. Subject to some caveats of non-comparability between these two rounds of the NFHS (covering the period 1992-93 to 1998-99), the findings suggest that the disparities have not diminished.

In the earlier discussion, an attempt was made to decompose the disparity between the SC and ST, on the one hand, and between either and non-scheduled households, on the other, into two components: characteristics and coefficients. While some of the differences in the characteristics/endowments could be attributed to historical forces (e.g. domination of

[32] They are small in relation to the dominant community but they vary in size. The size varies from 7 million in the case of the *Gonds* and *Bhils* to less than one thousand in some cases (Xaxa, 2001).

one group over another), under some assumptions those in the coefficients are attributable to "current" discrimination.

Confining to the latter, as noted earlier, a distinction could be made between "statistical" discrimination and "taste for discrimination" in the context of whether identity matters to the market. Statistical discrimination is due to imperfect information in, say, labour markets (women are less productive than men across several occupations) while the taste for discrimination view asserts that economic agents do so even if it means a loss of income. Empirically, these effects are difficult to disentangle, as they could occur together. But, more importantly, what is overlooked in these views of discrimination is "premarket" discrimination. This is particularly relevant in determining education, nutrition and health outcomes for women.

Findings

Based on a gender- caste development index (GCDI), the following results are reported in Deshpande (2007).

- For all the states, women in the Others category were the best-off and the SC and ST women were the worst-off in terms of the GCDI for 1998-99[33].
- Infant mortality rates were highest for the ST (84.2), followed by SC (83), and lowest for Others (61.8).
- Similar disparities are observed for under-5 mortality (119.3, 126.6 and 82.6, respectively).
- Women's nutritional status, measured by food consumption of specific items (milk/curd, pulses/beans, green, leafy vegetables, other vvegetables, fruits, eggs, chicken/mutton/fish), reflects similar disparities, with the proportion of women having consumed specific foods being highest among Others, and lowest among the ST (e.g. the proportion of women who consumed fruit once a week was 20.9 among the ST, 24.5 among the SC, and 39.7 among Others).
- Consequently, the proportion of women whose BMI is less than 18.5 (chronic energy deficiency) is much greater among SC and ST women than among Others.
- In the aggregate, the GCDI is higher in 1998-99 than in 1992-93, suggesting improvement in the overall living standard.
- However, the gaps between SC, ST and Others did not close between 1992-98. A partial but not irrelevant explanation is that privatisation of education and jobs during the 1990s may have come in the way of affirmative action. So much of the improvement was confined to the upper castes.
- Specifically, in the context of education, at the all-India level as many as 68 per cent SC women, and 40 per cent of upper caste women did not report any education in 1998-99 (the ST were omitted for this analysis).
- A higher percentage of men than women completed each stage of schooling. The median years of schooling was 5.5 for men and 1.6 for women.

[33] Note that Others exclude Other Backward Castes/classes.

- A comparison of the two rounds of the NFHS also reveals that the most significant gains occurred in the top category of occupation for the upper caste women, implying that the real beneficiaries of liberalisation were the elite within the upper castes.

In sum, material standard of living for women continues to be low despite an improvement during the 1990s. Within this overall pattern, there was significant inter-caste disparity, with the ST at the lowest level for several indicators.

Targeting of Anti-Poverty Programmes

Let us now examine the participation of social groups in various anti-poverty programmes. These include Food-For-Work (FFW), Public Distribution System (PDS), Integrated Child Development Services Scheme (ICDS), Mid-Day Meal Scheme (MMS), and *Annapoorna*.

(a) *Food-For Work Programme*

The FFW was launched in January 2000-01 as part of the Employment Assurance Scheme in eight drought affected states and subsequently extended to cover the notified districts experiencing natural calamities. Free foodgrains are supplied by the Government of India (GOI) to the states to enable them to offer wage employment to the rural poor. The states are allowed to pay wages in kind and cash. Preference is given to labour – intensive works that help build resilience against droughts (e.g. moisture conservation, de-silting of village ponds/tanks) and construction of rural link roads.

Let us first examine the targeting of FFW.

Table 46
Targeting Accuracy of FFW-Rural India, 2004-05[1]

Poverty Status	Participants (%)	Non-Participants (%)	Total
Poor	4.08 (36.86)	95.92 (24.50)	100 (24.84)
Non-Poor	2.31 (63.14)	97.69 (75.50)	100 (75.16)
Total	2.75 (100)	97.25 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

About 37 per cent of the FFW participants were poor and the remaining were non-poor. In other words, a large majority were non-poor. Among the ST, however, the majority of the participants were poor (about 55 per cent). Among the SC, the poor participants were a little over one-third, and among Others it was a little over one-quarter. That the targeting of the FFW was generally unsatisfactory is further corroborated by the high

Table 47
Targeting Accuracy of FFW among ST in Rural India, 2004-05[1]

Poverty Status	Participants (%)	Non-Participants (%)	Total
Poor	9.05 (54.76)	90.95 (42.97)	100 (43.82)
Non-Poor	5.83 (45.24)	94.17 (57.03)	100 (56.18)
Total	7.24 (100)	92.76 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

Table 48
Targeting Accuracy of FFW among SC in Rural India, 2004-05[1]

Poverty Status	Participants (%)	Non-Participants (%)	Total
Poor	2.89 (35.20)	97.11 (32.08)	100 (32.17)
Non-Poor	2.53 (64.80)	97.47 (67.92)	100 (67.83)
Total	2.65 (100)	97.35 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

Table 49
Targeting Accuracy of FFW among Others in Rural India, 2004-05[1]

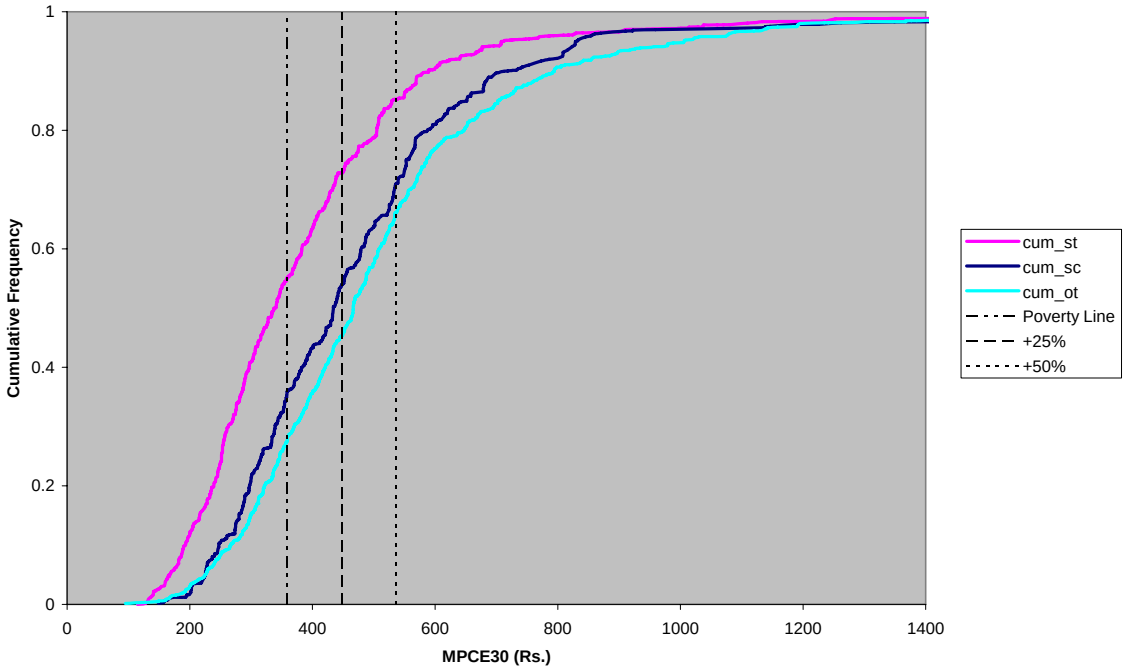
Poverty Status	Participants (%)	Non-Participants (%)	Total
Poor	2.89 (27.36)	97.11 (19.28)	100 (19.45)
Non-Poor	1.86 (72.64)	98.14 (80.72)	100 (80.55)
Total	2.06 (100)	97.94 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

Table 50
Average MPCE of a Participating Household in FFW by Social Group

Social Group	Average MPCE (Rs)
ST	395
SC	505
Others	526
Total	484

Fig: 2 Monthly Per Capita Expenditure-FFW



averages of MPCE (relative to the poverty cut-off point) among these social groups-especially among the SC and Others.

As illustrated in Fig: 2, the targeting was most accurate among the ST, followed by the SC, and Others, for a range of poverty cut-off points and for the FGT class of poverty indices.

(b) *Public Distribution System*

The PDS refers to the distribution of some essential commodities (e.g. wheat, rice, kerosene) by the government at subsidised rates through ration and fair price shops. In the analysis that follows, we define access to the PDS in terms of whether a household possessed a ration card (either under the *Antodaya*, or as a BPL or Others)[34]. Access of course does not necessarily involve purchase. Subject to this caveat, the ratio of the non-poor PDS beneficiaries was three times higher than that of the poor. Among the ST also, although the non-poor beneficiaries were the majority, the share of the poor was a little under one-half. But among the SC and Others, much larger majorities were non-poor. These findings are consistent with considerably higher averages of MPCE –relative to the poverty cut-off point-among each of these groups.

[34] Under the *Antodaya*, the 1 crore (or 10 million of the poorest families among the BPL households) under the Targeted Public Distribution System are identified and 25 kg of foodgrain are given to each eligible family at a highly subsidized rate of Rs 2 kg of wheat and Rs 3 per kg of rice.

Table 51
Targeting Accuracy of PDS-Rural India, 2004-05[1]

Poverty Status	Participants	Non-Participants	Total
Poor	79.13 (24.15)	20.87 (27.95)	100 (24.85)
Non-Poor	82.21 (75.85)	17.79 (72.05)	100 (75.15)
Total	81.44 (100)	18.56 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

Table 52
Targeting Accuracy of PDS among ST in Rural India, 2004-05[1]

Poverty Status	Participants	Non-Participants	Total
Poor	73.42 (42.51)	26.58 (47.76)	100 (43.79)
Non-Poor	77.35 (57.49)	22.65 (52.24)	100 (56.21)
Total	75.65 (100)	24.37 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

Table 53
Targeting Accuracy of PDS among SC in Rural India, 2004-05[1]

Poverty Status	Participants	Non-Participants	Total
Poor	81.76 (31.66)	18.24 (34.82)	100 (32.19)
Non-Poor	83.79 (68.34)	16.21 (65.18)	100 (67.81)
Total	83.14 (100)	16.86 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

Table 54
Targeting Accuracy of PDS among Others in Rural India, 2004-05[1]

Poverty Status	Participants	Non-Participants	Total
Poor	79.84 (18.99)	20.16 (21.62)	100 (19.47)
Non-Poor	82.33 (81.01)	17.67 (78.38)	100 (80.53)
Total	81.85 (100)	18.15 (100)	100 (100)

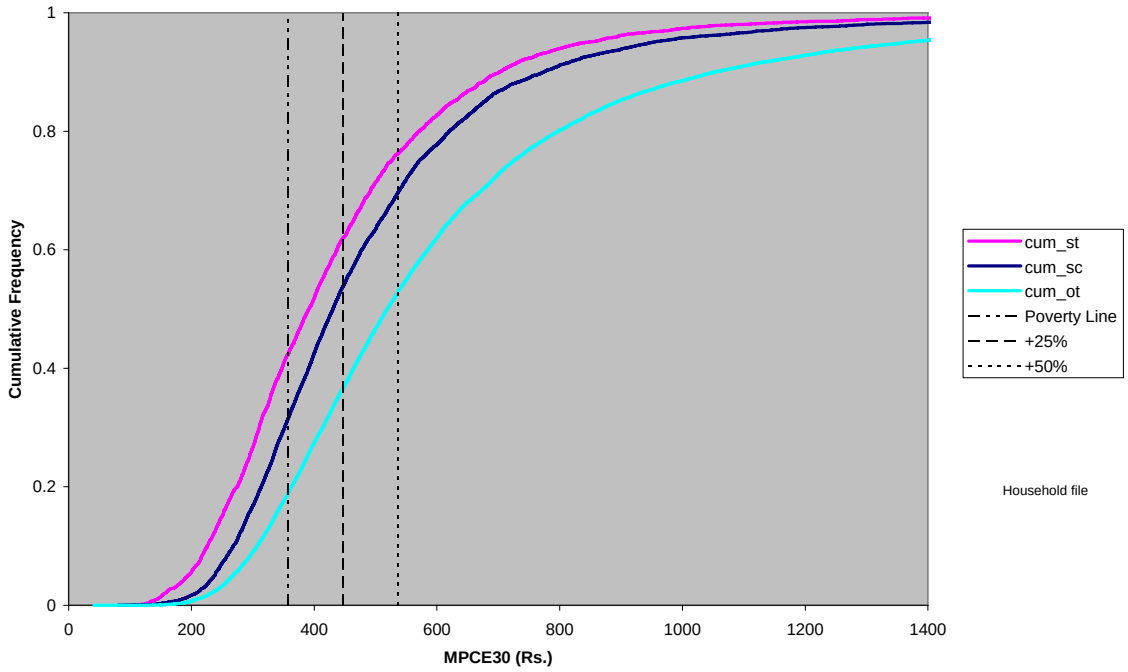
1. The poverty cut-off point is Rs 358 per capita per month.

Table 55
Average MPCE of a Participating Household in PDS by Social Group

Social Group	Average MPCE (Rs)
ST	449
SC	503
Others	652
Total	551

Stochastic dominance of the cumulative expenditure distribution of Others over those of the SC and ST, and of that of the SC over that of the ST further corroborate that the targeting was most accurate among the ST, followed by the SC and then Others, for a range of poverty cut-off points and the FGT class of poverty indices.

Fig: 3 Monthly Per Capita Expenditure-PDS



(c) *Extension*

As an extension of the preceding analysis we examine the relationship (i) between ration card holders and use of the PDS, and (ii) the latter by the poor and non-poor belonging to the ST, SC and Others.

Table 56
Commodity –Wise Use of PDS by Ration Card Holders

Commodity	Fraction of Ration Card Holders (%)
Rice	29.29
Wheat	13.26
Sugar	19.12
Kerosene	81.94

As shown above, barely 13 per cent of the ration card holders used the PDS for buying wheat. For sugar and rice the proportions were higher-especially for the latter. However, close to 82 per cent used their ration cards for buying kerosene. So at the aggregate level, there is a high correspondence between ration card holders and those who used it for buying *any* of the four commodities. Using the latter as a measure of the use of the PDS, let us first examine the use by the poor and non-poor in the aggregate sample. While a large majority of the poor used the PDS, they were a little over a quarter of the total beneficiaries. So the non-poor were a large majority of the PDS beneficiaries. Among the ST, while a large majority of the poor benefited, they were just under one-half of the total beneficiaries. This was also the case with the SC except that the poor were one-third of the beneficiaries. Among Others, the share of poor beneficiaries was just about one-fifth. So even the disaggregated analysis confirms that the non-poor were an overwhelmingly large majority in each group. This is also corroborated by average MPCE of a beneficiary household exceeding the poverty cut-off point in each group-especially Others.

Table 57
Use of PDS by Poor and Non-Poor[1]

Poverty Status	Beneficiary	Non-Beneficiary	Total
Poor	80.95 (26.12)	19.05 (20.61)	100 (24.86)
Non-poor	75.72 (73.88)	24.28 (79.39)	100 (75.14)
Total	77.02 (100)	22.98 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

Table 58
Use of PDS by ST[1]

Poverty Status	Beneficiary	Non-Beneficiary	Total
Poor	78.67 (45.17)	21.33 (39.35)	100 (43.79)
Non-poor	74.39 (54.83)	25.61 (60.65)	100 (56.21)
Total	23.74 (100)	76.26 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

Table 59
Use of PDS by SC[1]

Poverty Status	Beneficiary	Non-Beneficiary	Total
Poor	82.18 (33.55)	17.82 (27.12)	100 (32.19)
Non-poor	77.27 (66.45)	22.73 (72.88)	100 (67.81)
Total	78.85 (100)	21.15 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

Table 60
Use of PDS by Others[1]

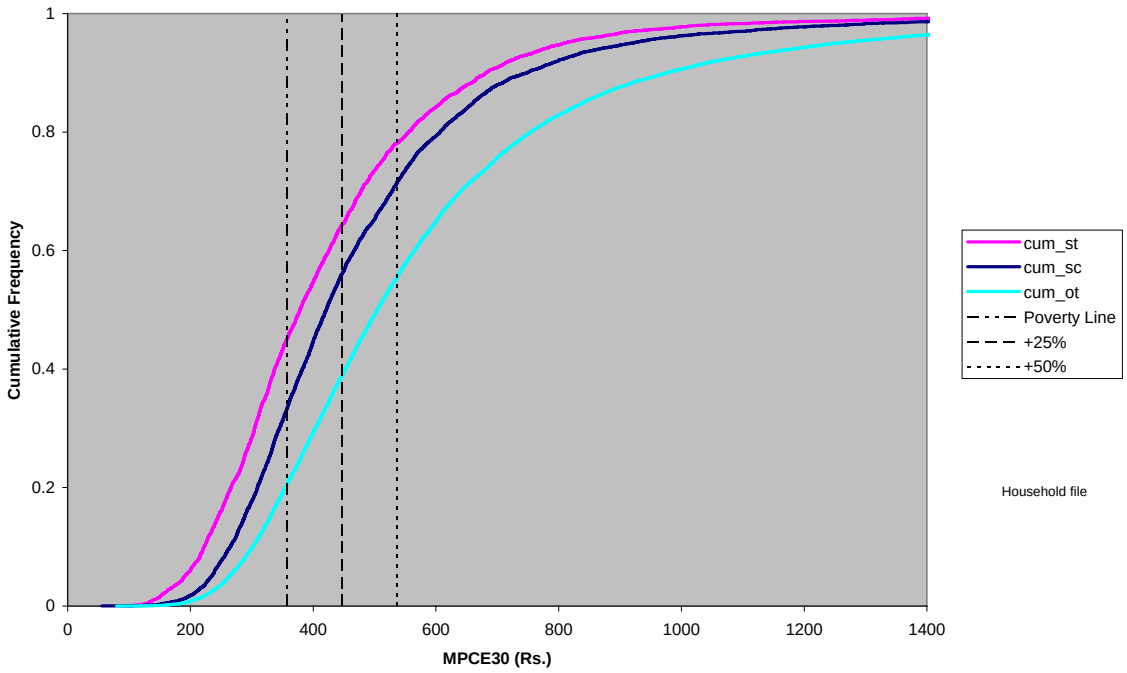
Poverty Status	Beneficiary	Non-Beneficiary	Total
Poor	81.13 (20.64)	18.87 (15.68)	100 (19.48)
Non-poor	75.46 (79.36)	24.54 (84.32)	100 (80.52)
Total	76.56 (100)	23.44 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.
2.

Table 61
Average MPCE of a Beneficiary Household under PDS by Social Group

Social Group	Average MPCE (Rs)
ST	436
SC	490
Others	616
Total	569

Fig: 4 Monthly Per Capita Expenditure-PDS Use



A redeeming feature, however, is that regardless of the poverty cut-off point (in the range specified) and the poverty index in the FGT class, the PDS was most accurately targeted among the ST, followed by the SC and Others.

Let us consider another extension. In an earlier analysis, (Gaiha, 2000**),** it was reported that relatively affluent sections of rural population tend to capture a large share of the benefits of just any anti-poverty intervention but of others too. To examine this we will look at the intersection of FFW and PDS participants. It should however be noted that since FFW operated in a relatively small area of the country (150 districts), the sample of FFW participants is relatively small. Despite this limitation, some of the cross-tabulations offer useful insights.

The first remark is that the proportions of poor in the aggregate or by social group are similar to those for FFW. The second is that the average per capita expenditure of the intersection in the aggregate or by social group is also similar. So this subset was similar to that of FFW. More specifically, the large leakages to the non-poor under FFW are also corroborated by the intersection of beneficiaries under both FFW and PDS. However, it is noteworthy that regardless of the poverty cut-off point (in the specified range) and poverty index in the FGT class, joint participation was better targeted among the ST relative to the SC, and among the SC relative to Others.

Table 62

Intersection of Beneficiaries of FFW and PDS[1]

Poverty Status	Beneficiary of both FFW and PDS	Non-Beneficiary	Total
Poor	3.70 (37.48)	96.30 (24.52)	100 (24.84)
Non-poor	2.04 (62.52)	97.96 (75.48)	100 (75.16)
Total	2.45 (100)	97.55 (100)	100 (100)

1.Note that the complement consists of those who benefited from either FFW or PDS and those who did not benefit from either. The poverty cut-off point is Rs 358 per capita per month.

Table 63

Intersection of Beneficiaries of FFW and PDS among ST[1]

Poverty Status	Beneficiary of both FFW and PDS	Non-Beneficiary	Total
Poor	8.58 (55.58)	91.42 (42.95)	100 (43.82)
Non-poor	5.29 (44.12)	94.71 (57.05)	100 (56.18)
Total	6.73 (100)	93.27 (100)	100 (100)

1.Note that the complement consists of those ST who benefited from either FFW or PDS and those who did not benefit from either. The poverty cut-off point is Rs 358 per capita per month.

Table 64

Intersection of Beneficiaries of FFW and PDS among SC[1]

Poverty Status	Beneficiary of both FFW and PDS	Non-Beneficiary	Total
Poor	2.48 (34.89)	97.52 (32.10)	100 (32.17)
Non-poor	2.19 (65.11)	97.81 (67.90)	100 (67.83)
Total	2.28 (100)	97.72 (100)	100 (100)

1.Note that the complement consists of those SC who benefited from either FFW or PDS and those who did not benefit from either. The poverty cut-off point is Rs 358 per capita per month.

Table 65

Intersection of Beneficiaries of FFW and PDS among Others[1]

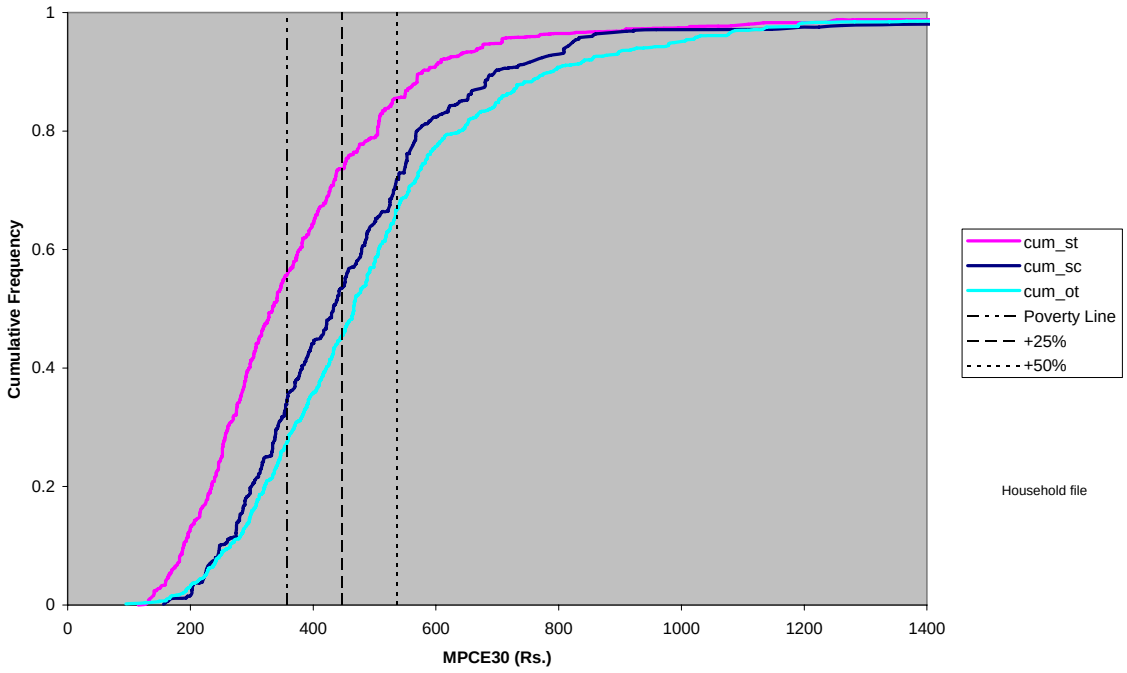
Poverty Status	Beneficiary of both FFW and PDS	Non-Beneficiary	Total
Poor	2.57 (27.50)	97.43 (19.30)	100 (19.45)
Non-poor	1.64 (72.50)	98.36 (80.70)	100 (80.55)
Total	1.82 (100)	98.18 (100)	100 (100)

1.Note that the complement consists of those Others who benefited from either FFW or PDS and those who did not benefit from either. The poverty cut-off point is Rs 358 per capita per month.

Table 66
Average MPCE of Intersection of Beneficiary Households under FFW and PDS by Social Group

Social Group	Average MPCE (Rs)
ST	392
SC	508
Others	513
Total	476

Fig: 5 Monthly Per Capita Expenditure-FFW Intersection PDS Use



(d) Integrated Child Development Services (ICDS) Scheme

The ICDS was launched as a nation-wide scheme in 1975. It aims at improving the nutritional status of vulnerable groups including pre-school children, pregnant women and nursing mothers through a package of services consisting of supplementary nutrition, pre-school education, immunization, health check-up, and nutritional and health education. The target population is the poorest living in disadvantaged areas, including tribal areas and urban slums.

Table 67
Targeting Accuracy of ICDS-Rural India, 2004-05[1]

Poverty Status	Participants	Non-Participants	Total
Poor	8.90 (38.94)	91.10 (23.99)	100 (24.84)
Non-Poor	4.62 (61.06)	95.38 (76.01)	100 (75.16)
Total	5.68 (100)	94.32 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

As about 39 per cent of the participants belonged to poor households, a large majority were non-poor. This is further corroborated by the high average MPCE of the participating households. By contrast, the majority of ST participating households (about 60 per cent) were poor. Among the SC, however, while the majority were non-poor, the

share of the poor was just under one-half. The pattern among Others was similar to that of the aggregate sample, with the non-poor participants a large majority. A consistent picture emerges from the average MPCE of these social groups. The MPCE of the ST participants was in fact just about equal to the poverty cut-off point, implying that even very poor households participated in the ICDS.

Table 68
Targeting Accuracy of ICDS among ST in Rural India, 2004-05[1]

Poverty Status	Participants	Non-Participants	Total
Poor	12.94 (59.84)	87.06 (42.14)	100 (43.82)
Non-Poor	6.77 (40.16)	93.23 (57.86)	100 (56.18)
Total	9.48 (100)	90.52 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

Table 69
Targeting Accuracy of ICDS among SC in Rural India, 2004-05[1]

Poverty Status	Participants	Non-Participants	Total
Poor	8.31 (44.04)	91.69 (31.40)	100 (32.16)
Non-Poor	5.01 (55.96)	94.99 (68.60)	100 (67.84)
Total	6.07 (100)	93.93 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

Table 70
Targeting Accuracy of ICDS among Others in Rural India, 2004-05[1]

Poverty Status	Participants	Non-Participants	Total
Poor	7.76 (30.54)	92.24 (18.88)	100 (19.46)
Non-Poor	4.26 (69.46)	95.74 (81.12)	100 (80.54)
Total	4.94 (100)	95.06 (100)	100 (100)

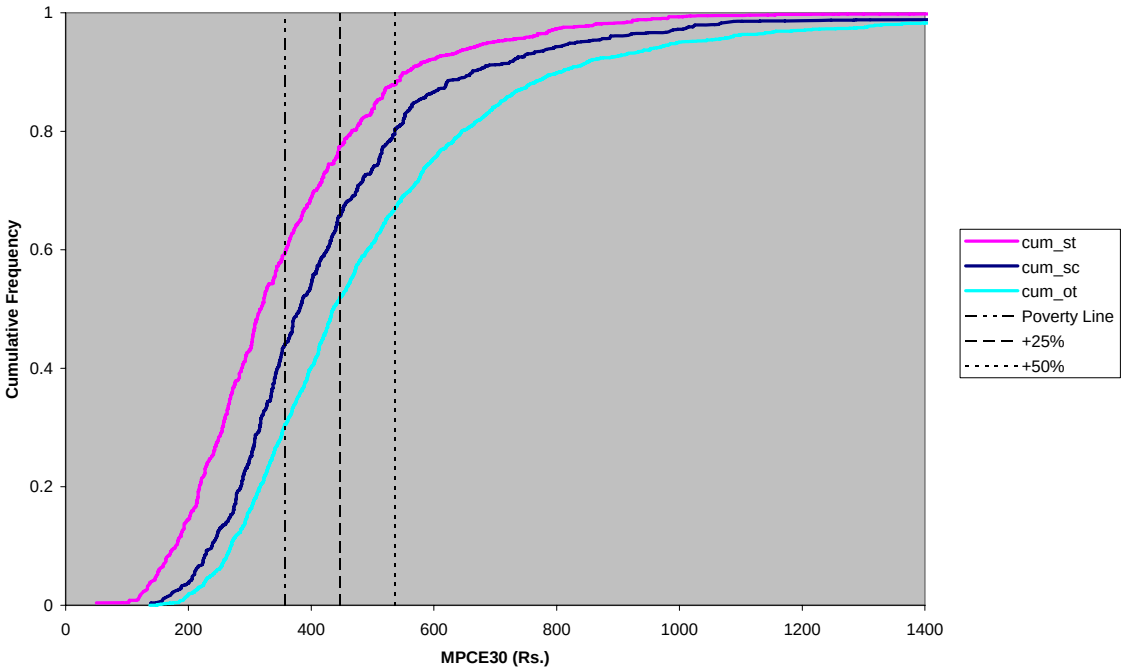
1. The poverty cut-off point is Rs 358 per capita per month.

The stochastic dominance test in Fig: 6 also confirms that the ICDS targeting was most accurate among the ST, followed by the SC and then Others, for a range of poverty cut-off points and the FGT class of poverty indices.

Table 71
Average MPCE of a Participating Household in ICDS by Social Group

Social Group	Average MPCE (Rs)
ST	357
SC	442
Others	525
Total	475

Fig:6 Monthly Per Capita Expenditure-ICDS



(e) Mid-Day Meal Scheme

This scheme (MDMS) was revised and universalised at the primary school level in September, 2004. The objective is to lower the widespread malnutrition, primarily among children from poor families, and to increase their access to education. Besides providing foodgrains free of cost to the states/UTs, and foodgrain transportation subsidy, the central government provides assistance for converting foodgrains into cooked meals at the rate of Re. 1 per child per day. At present, this scheme covers 12 crore children.

The targeting of the MDMS was unsatisfactory as a little over one-third of the participating households were poor. The participation of poor ST households, however, was better, as they accounted for more than one-half of the total participants. While the majority of the SC participants were non-poor, the share of the poor was a little under one-half.

Table 72
Targeting Accuracy of MDMS-Rural India, 2004-05[1]

Poverty Status	Participants	Non-Participants	Total
Poor	33.67 (36.68)	66.33 (21.36)	100 (24.85)
Non-Poor	19.22 (63.32)	80.78 (78.64)	100 (75.15)
Total	22.81 (100)	77.19 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

Table 73
Targeting Accuracy of MDMS among ST in Rural India, 2004-05[1]

Poverty Status	Participants	Non-Participants	Total
Poor	36.90 (56.05)	63.10 (38.96)	100 (43.89)
Non-Poor	22.64 (43.95)	77.36 (61.04)	100 (56.11)
Total	28.90 (100)	71.10 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

Table 74
Targeting Accuracy of MDMS among SC in Rural India, 2004-05[1]

Poverty Status	Participants	Non-Participants	Total
Poor	33.61 (42.69)	66.39 (28.60)	100 (32.17)
Non-Poor	21.40 (57.31)	78.60 (71.40)	100 (67.83)
Total	25.33 (100)	74.67 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

Table 75
Targeting Accuracy of MDMS among Others in Rural India, 2004-05[1]

Poverty Status	Participants	Non-Participants	Total
Poor	32.55 (30.11)	67.45 (16.63)	100 (19.47)
Non-Poor	18.26 (69.89)	81.74 (83.37)	100 (80.53)
Total	21.04 (100)	78.96 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

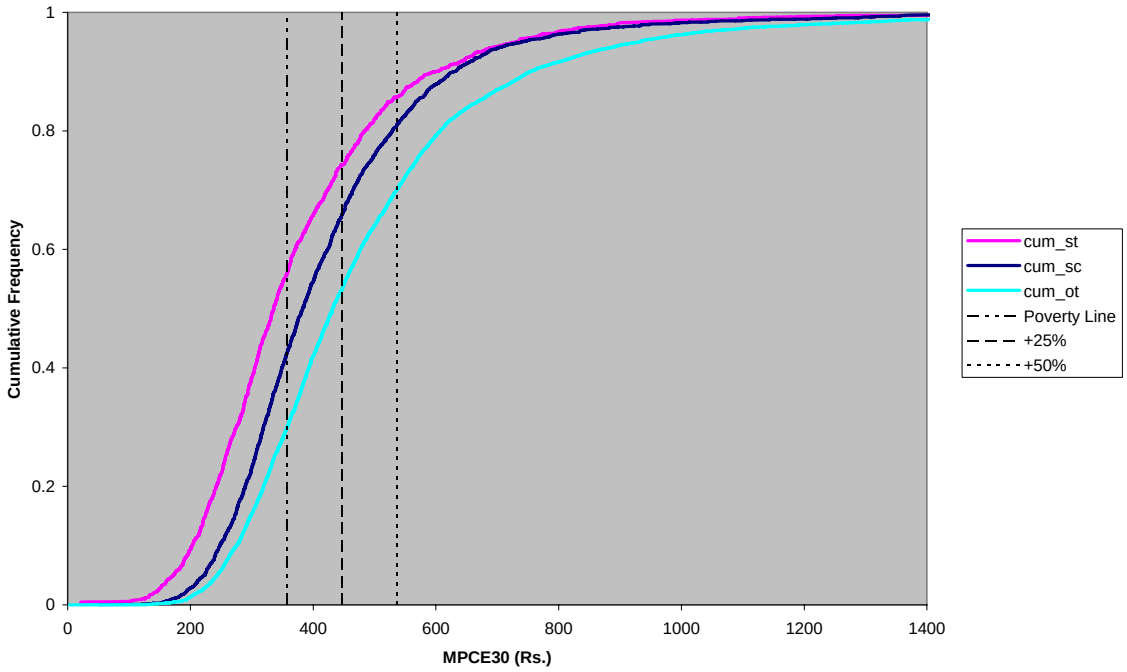
Among Others, however, the share of poor participants was considerably lower (below one-third). That the targeting accuracy is highest among the ST, followed by

the SC, and then Others is consistent with the average MPCE of these groups. This conclusion is not affected when a range of poverty cut-off points and the FGT class of poverty indices are considered.

Table 76
Average MPCE of a Participating Household in MDMS by Social Group

Social Group	Average MPCE (Rs)
ST	382
SC	426
Others	498
Total	465

Fig: 7 Monthly Per Capita Expenditure-MDMS



(f) Annapoorna

This scheme was launched in 2000. It is designed to cover those eligible for but not receiving old age pension under the National Old Age Pension Scheme (NOAPS). The beneficiaries get 10 kg of foodgrains per month free of cost.

Even the *Annapoorna* displayed a low targeting accuracy in general, with the poor participants accounting for a little over one-third of the total beneficiaries. While the share of poor ST participants was higher, it was below one half. Among the SC, the corresponding share was a little over one-third while among Others it was under one-

third. The average MPCE was lowest among the ST and highest among Others. But in all cases the average was well above the poverty cut-off point. As the cumulative expenditure distribution curves intersect within the range of poverty cut-off points, the first order dominance does not hold. However, it may be noted that upto a poverty cut-off point of Rs 400, the targeting among the ST was better relative to the SC and others.

Table 77
Targeting Accuracy of Annapoorna-Rural India, 2004-05[1]

Poverty Status	Participants	Non-Participants	Total
Poor	1.17 (34.08)	98.83 (24.76)	100 (24.84)
Non-Poor	0.75 (65.92)	99.25 (75.24)	100 (75.16)
Total	0.85 (100)	99.15 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

Table 78
Targeting Accuracy of Annapoorna among ST in Rural India, 2004-05[1]

Poverty Status	Participants	Non-Participants	Total
Poor	0.90 (44.26)	99.10 (43.81)	100 (43.81)
Non-Poor	0.88 (55.74)	99.12 (56.19)	100 (56.19)
Total	0.89 (100)	99.11 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

Table 79
Targeting Accuracy of Annapoorna among SC in Rural India, 2004-05[1]

Poverty Status	Participants	Non-Participants	Total
Poor	1.58 (35.10)	98.42 (32.12)	100 (32.17)
Non-Poor	1.38 (64.90)	98.62 (67.88)	100 (67.83)
Total	1.44 (100)	98.56 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

Table 80
Targeting Accuracy of Annapoorna among Others in Rural India, 2004-05[1]

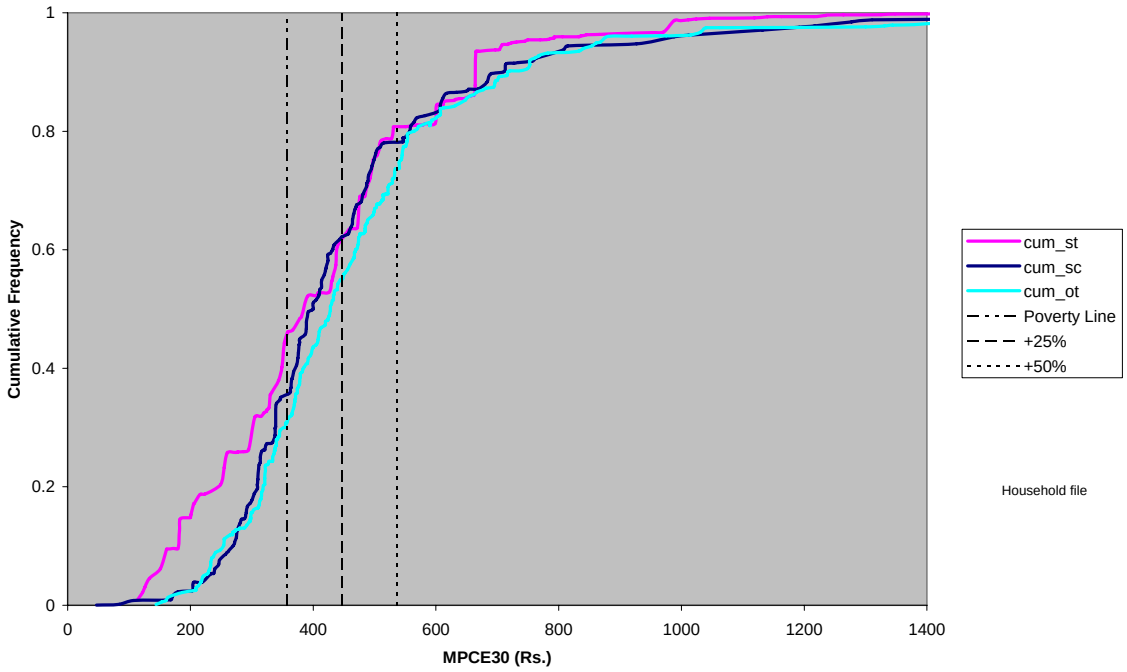
Poverty Status	Participants	Non-Participants	Total
Poor	1.06 (31.18)	98.94 (19.38)	100 (19.46)
Non-Poor	0.57 (69.82)	99.43 (80.62)	100 (80.54)
Total	0.66 (100)	99.34 (100)	100 (100)

1. The poverty cut-off point is Rs 358 per capita per month.

Table 81
Average MPCE of a Participating Household in Annapoorna by Social Group

Social Group	Average MPCE (Rs)
ST	418
SC	476
Others	485
Total	474

Fig: 8 Monthly Per Capita Expenditure-Annapoorna



Determinants of Participation in Anti-Poverty Programmes

Here we focus on participation of the ST and SC in two major anti-poverty programmes: the PDS and Food-For-Work.

Let us first consider the determinants of participation in the PDS. We have considered several different specifications, and a selection of the results is given below. The different probit specifications used include: (i) a set of demographic, educational, landownership, and occupational variables at the household level, supplemented by a food price index, using the Deaton-Tarozzi method of unit values, at the NSS regional level, as the right side variables[35]. (ii) In an alternative specification, these are combined with state dummies to capture fixed effects. Since the policy regimes differ across the states, as also the concerns for mitigating deprivation of disadvantaged groups such as the ST and SC, the state dummies are likely to capture some of these differences. (iii) These specifications are first tried on the aggregate sample, and then on each social group.

In Table 82,

- Female-headed households are more likely to participate in the PDS;
- The higher the number of adult males and females, the greater is the probability of participation in this scheme;
- However, the larger the proportion of adults in a household, the less likely it is that it will participate in this scheme;
- The higher the age of the household, the greater is the probability of participation in the PDS; however, this relationship weakens with age;
- The higher the educational level of any adult in the household, the less likely it is that it will buy from the PDS;
- Even those owning small quantities of land (i.e. between 0.1-2.5 ha) are more likely to buy from the PDS, relative to the default category of landless.
- Households in each of the four occupational categories were more likely to participate in this scheme, relative to the default occupational group, 'Others'.
- The higher the food price index, the greater is the probability of a household participating in the PDS.
- Controlling for these effects, while the SC dummy has a positive and significant coefficient, that of the ST dummy is not significant.

[35] For details, see Deaton and Tarozzi (2000).

Table 82

Determinants of Participation in the PDS (Aggregate Sample)

```
Probit regression                                 Number of obs   =      78874
                                                  LR chi2(18)     =    4158.14
                                                  Prob > chi2     =     0.0000
Log likelihood = -39791.613                       Pseudo R2       =     0.0497

------------------------------------------------------------------------------
         pds |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    fem_head |     .10767   .0183766     5.86   0.000     .0716526    .1436875
   ad_female |   .1174514   .0083639    14.04   0.000     .1010584    .1338444
     ad_male |   .0409537   .0080261     5.10   0.000     .0252229    .0566845
   ad_p_hhsz |  -.4020579   .0232143   -17.32   0.000    -.4475571   -.3565588
    age_h100 |   4.072416   .2274862    17.90   0.000     3.626551    4.518281
     _IagXag |  -3.503984   .2328705   -15.05   0.000    -3.960402   -3.047566
  _Iedu_hr_2 |     .00499   .0148478     0.34   0.737    -.0241111    .0340911
  _Iedu_hr_3 |  -.1141987   .0141341    -8.08   0.000    -.1419009   -.0864964
  _Iedu_hr_4 |  -.3066398   .0177678   -17.26   0.000     -.341464   -.2718156
_Iland_opr_2 |   .2771918   .0129617    21.39   0.000     .2517873    .3025963
_Iland_opr_3 |  -.0290977   .0231649    -1.26   0.209       -.0745    .0163047
 _Ihh_type_1 |   .2941881   .0200927    14.64   0.000      .254807    .3335691
 _Ihh_type_2 |   .3814154   .0192138    19.85   0.000     .3437571    .4190738
 _Ihh_type_3 |   .2739377   .0221941    12.34   0.000     .2304381    .3174373
 _Ihh_type_4 |   .2589429   .0191902    13.49   0.000     .2213307     .296555
_Isocial_g~1 |  -.0001408   .0172103    -0.01   0.993    -.0338724    .0335907
_Isocial_g~2 |   .1111677   .0133741     8.31   0.000     .0849551    .1373804
  d_fprice_i |   .0960781   .0031295    30.70   0.000     .0899444    .1022119
       _cons |  -1.489928    .058494   -25.47   0.000    -1.604574   -1.375282
```

Table 83

Determinants of Participation in the PDS (Aggregate Sample)

(With State Dummies)

```
Probit regression                                 Number of obs   =      78874
                                                  LR chi2(52)     =   11385.80
                                                  Prob > chi2     =     0.0000
Log likelihood = -36177.786                       Pseudo R2       =     0.1360

------------------------------------------------------------------------------
         pds |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    fem_head |   .0942698     .01918     4.92   0.000     .0566777    .1318618
   ad_female |   .1218346   .0087985    13.85   0.000     .1045899    .1390793
     ad_male |   .0335009   .0084756     3.95   0.000     .0168891    .0501127
   ad_p_hhsz |  -.3826876    .024326   -15.73   0.000    -.4303656   -.3350096
    age_h100 |    4.51632   .2374717    19.02   0.000     4.050884    4.981756
     _IagXag |  -3.766343   .2433688   -15.48   0.000    -4.243338   -3.289349
  _Iedu_hr_2 |    .032714   .0156339     2.09   0.036     .0020723    .0633558
  _Iedu_hr_3 |  -.0201909   .0150457    -1.34   0.180      -.04968    .0092981
  _Iedu_hr_4 |  -.2141914   .0189163   -11.32   0.000    -.2512666   -.1771162
_Iland_opr_2 |   .2096442   .0137032    15.30   0.000     .1827864    .2365019
_Iland_opr_3 |  -.0380339   .0247787    -1.53   0.125    -.0865992    .0105314
 _Ihh_type_1 |   .2555141   .0211024    12.11   0.000     .2141541    .2968741
 _Ihh_type_2 |   .4010689   .0203997    19.66   0.000     .3610863    .4410516
 _Ihh_type_3 |    .281337   .0235225    11.96   0.000     .2352338    .3274402
 _Ihh_type_4 |    .236496   .0201864    11.72   0.000     .1969313    .2760607
_Isocial_g~1 |    .095684   .0190734     5.02   0.000     .0583009    .1330672
_Isocial_g~2 |   .1113492   .0142643     7.81   0.000     .0833918    .1393067
  d_fprice_i |   .1019814   .0091212    11.18   0.000     .0841041    .1198586
       _cons |  -2.023799   .1418992   -14.26   0.000    -2.301917   -1.745682
```

- However, with state dummies, while many of the coefficients change in magnitude without a loss of significance, the coefficients of both the ST and SC dummies are positive and significant, as shown in Table 83..

Table 84

Determinants of Participation in the PDS (ST)

(With State Dummies)

```
Probit regression                                 Number of obs   =      12676
                                                  LR chi2(45)     =    1469.34
                                                  Prob > chi2     =     0.0000
Log likelihood = -5796.6241                       Pseudo R2       =     0.1125
------------------------------------------------------------------------------
         pds |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    fem_head |  -.0573353   .0506113    -1.13   0.257    -.1565317    .0418611
   ad_female |    .081699   .0227463     3.59   0.000     .0371171    .1262809
     ad_male |   .0228227   .0222163     1.03   0.304    -.0207204    .0663658
   ad_p_hhsz |  -.2145175    .060714    -3.53   0.000    -.3335147   -.0955203
    age_h100 |   4.732952   .6430853     7.36   0.000     3.472528    5.993376
     _IagXag |  -4.263827   .6895522    -6.18   0.000    -5.615324   -2.912329
  _Iedu_hr_2 |   .0209243   .0349094     0.60   0.549    -.0474969    .0893454
  _Iedu_hr_3 |   .0549691   .0382586     1.44   0.151    -.0200163    .1299545
  _Iedu_hr_4 |  -.1885793   .0557299    -3.38   0.001    -.2978079   -.0793507
_Iland_opr_2 |   .3877765   .0338433    11.46   0.000     .3214448    .4541082
_Iland_opr_3 |   .1532379   .0608644     2.52   0.012     .0339459    .2725299
 _Ihh_type_1 |   .1934417   .0740916     2.61   0.009     .0482249    .3386585
 _Ihh_type_2 |   .3329223   .0618947     5.38   0.000      .211611    .4542336
 _Ihh_type_3 |   .3062021   .0716274     4.27   0.000      .165815    .4465892
 _Ihh_type_4 |   .1417307   .0620534     2.28   0.022     .0201083    .2633531
  d_fprice_i |   .0636349   .0258201     2.46   0.014     .0130284    .1142413
       _cons |  -1.548915   .6756892    -2.29   0.022    -2.873242    -.224589
```

Let us now turn to the determinants of participation in the PDS in the sub-sample of the ST.

There are a few differences.

- Female-headed households are not more likely to participate in the PDS.

- Nor is the number of male adults associated with a higher probability of buying from this scheme.

- Only matriculates and above have a lower probability of buying from the PDS.

- Also both land dummies have significant positive coefficients, implying higher probabilities of participating in this scheme, relative to the landless.

- All other variables have coefficients similar in sign and significance, as in the aggregate sample.

Table 85

Determinants of Participation in the PDS (SC)

(With State Dummies)

Probit regression — Number of obs = 13637; LR chi2(42) = 2448.20; Prob > chi2 = 0.0000; Log likelihood = -5681.1935; Pseudo R2 = 0.1773

pds	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
fem_head	.1050513	.0492259	2.13	0.033	.0085703	.2015322
ad_female	.1231687	.0242611	5.08	0.000	.0756178	.1707196
ad_male	.0452739	.0234007	1.93	0.053	-.0005906	.0911385
ad_p_hhsz	-.3381549	.0615927	-5.49	0.000	-.4588744	-.2174354
age_h100	4.474512	.6148774	7.28	0.000	3.269374	5.679649
_IagXag	-3.686257	.6464986	-5.70	0.000	-4.953371	-2.419143
_Iedu_hr_2	.0268512	.0369245	0.73	0.467	-.0455194	.0992218
_Iedu_hr_3	.0309506	.036627	0.85	0.398	-.0408369	.1027381
_Iedu_hr_4	-.1310587	.0517845	-2.53	0.011	-.2325546	-.0295629
_Iland_opr_2	.1840248	.0348805	5.28	0.000	.1156603	.2523893
_Iland_opr_3	-.0630097	.0991852	-0.64	0.525	-.257409	.1313897
_Ihh_type_1	.2817818	.058533	4.81	0.000	.1670591	.3965044
_Ihh_type_2	.3696236	.0521251	7.09	0.000	.2674602	.471787
_Ihh_type_3	.2507154	.0579327	4.33	0.000	.1371694	.3642613
_Ihh_type_4	.159529	.0587879	2.71	0.007	.0443069	.2747512
d_fprice_i	.094607	.028947	3.27	0.001	.037872	.151342
cons	-2.404493	.3547962	-6.78	0.000	-3.099881	-1.709106

Compared with the aggregate sample results, those from the sub-sample of the SC are largely similar with a few differences.

- While the dummy for the highest educational level (i.e.matriculation and above) is negative and significant, the remaining two dummies do not have significant coefficients. So the implication is that only SC households with at least a matriculate or above have lower probabilities of participating in this scheme, relative to those with illiterate members.

- However, between the ST and SC, the differences are more striking. Female-headed households among the SC are more likely to participate in the PDS but not among the ST. Also, while larger number of male adults among the SC households are associated with higher probabilities of participation in this scheme, this is not the case among the ST. Also, the effects of landowned differ. Among the SC, households with landowned between 0.1-2.5 ha are more likely to participate, while among the ST both land dummies have significant coefficients, implying that households in the highest landowned group (i.e. > 2.5 ha) were also more likely to participate relative to the landless. The remaining results are similar in sign and significance.

Table 86

Determinants of Participation in the PDS (Others)

(With State Dummies)

```
Probit regression                                 Number of obs   =      52540
                                                  LR chi2(50)     =    7673.63
                                                  Prob > chi2     =     0.0000
Log likelihood = -24541.526                       Pseudo R2       =     0.1352
------------------------------------------------------------------------------
         pds |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    fem_head |    .116076   .0230826     5.03   0.000     .0708349     .161317
   ad_female |   .1273709   .0104428    12.20   0.000     .1069035    .1478384
     ad_male |   .0319574    .010037     3.18   0.001     .0122852    .0516295
   ad_p_hhsz |  -.4118824    .029659   -13.89   0.000     -.470013   -.3537518
    age_h100 |   4.655841   .2876148    16.19   0.000     4.092126    5.219555
     _IagXag |  -3.861122   .2910654   -13.27   0.000      -4.4316   -3.290644
  _Iedu_hr_2 |   .0254312   .0199215     1.28   0.202    -.0136142    .0644766
  _Iedu_hr_3 |  -.0463231   .0187544    -2.47   0.014     -.083081   -.0095651
  _Iedu_hr_4 |  -.2402948   .0227031   -10.58   0.000    -.2847921   -.1957975
_Iland_opr_2 |   .1908989   .0167928    11.37   0.000     .1579856    .2238122
_Iland_opr_3 |  -.0530887     .02853    -1.86   0.063    -.1090064    .0028291
 _Ihh_type_1 |   .2617242   .0242868    10.78   0.000     .2141229    .3093255
 _Ihh_type_2 |   .4251897   .0248156    17.13   0.000      .376552    .4738273
 _Ihh_type_3 |   .2913325   .0288475    10.10   0.000     .2347925    .3478725
 _Ihh_type_4 |   .2707848   .0234227    11.56   0.000     .2248771    .3166924
  d_fprice_i |    .099774    .010673     9.35   0.000     .0788553    .1206928
       _cons |  -1.843058   .1725237   -10.68   0.000    -2.181198   -1.504918
```

The results for Others also differ from the aggregate sample results. The effects of educational attainments vary. Among Others, only Middle and Matriculates and above have significant negative coefficients, implying lower probability of participation in the PDS. By contrast, in the aggregate sample, while those with primary education have a significantly higher probability of participation, only those with matriculation and above have a lower probability of participation, relative to illiterate households. Also, those with small or moderate quantities of land are more likely to participate, as in the aggregate sample, but households owning larger quantities are significantly less likely to do so, relative to the landless. All other variables are similar in sign and significance.

Table 87
Determinants of Participation in FFW (Aggregate)
(with NSS region dummies)

```
Probit regression                                 Number of obs   =      35510
                                                  LR chi2(80)     =    3093.37
                                                  Prob > chi2     =     0.0000
Log likelihood = -6830.7409                       Pseudo R2       =     0.1846

------------------------------------------------------------------------------
         ffw |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    fem_head |    -.16019   .0485829    -3.30   0.001    -.2554108   -.0649692
   ad_female |  -.0008196   .0203934    -0.04   0.968      -.04079    .0391507
     ad_male |    .108208   .0196164     5.52   0.000     .0697606    .1466555
   ad_p_hhsz |   -.231402    .058408    -3.96   0.000    -.3458796   -.1169245
    age_h100 |  -.0370286   .5785398    -0.06   0.949    -1.170946    1.096888
     _IagXag |  -.2249276   .6028522    -0.37   0.709    -1.406496     .956641
  _Iedu_hr_2 |  -.0722164   .0310042    -2.33   0.020    -.1329835   -.0114492
  _Iedu_hr_3 |  -.1176745   .0329759    -3.57   0.000     -.182306    -.053043
  _Iedu_hr_4 |  -.4127165   .0535079    -7.71   0.000    -.5175901   -.3078428
_Iland_opr_2 |   .1340265   .0292431     4.58   0.000     .0767111     .191342
_Iland_opr_3 |  -.0376644   .0570603    -0.66   0.509    -.1495006    .0741718
 _Ihh_type_1 |   .4814844   .0910238     5.29   0.000      .303081    .6598878
 _Ihh_type_2 |   1.171586   .0855483    13.70   0.000     1.003914    1.339258
 _Ihh_type_3 |   1.136884   .0877395    12.96   0.000     .9649179     1.30885
 _Ihh_type_4 |   .7245911   .0855633     8.47   0.000     .5568902     .892292
_Isocial_g~1 |   .5385854   .1736161     3.10   0.002      .198304    .8788668
_Isocial_g~2 |   .2848624   .1554678     1.83   0.067    -.0198489    .5895736
     wages_p |   .0335856   .0272858     1.23   0.218    -.0198935    .0870647
    _Iso1Xwa |  -.0073489   .0035943    -2.04   0.041    -.0143936   -.0003043
    _Iso2Xwa |  -.0050989   .0030902    -1.65   0.099    -.0111556    .0009577
        cons |  -5.518174    2.22231    -2.48   0.013    -9.873822   -1.162525
```

1. Note that the annual agricultural wage rate at the state level is used here and interacted with ST and SC dummies.

As in the case of the PDS, we discuss a selection of the results to throw light on the determinants of participation in FFW.

Let us first consider the results obtained from the aggregate sample, given in Table 87..

- Female headship and participation in FFW are inversely related.
- The higher the number of adult males, the greater is the probability of participation in this programme.
- However, the higher the proportion of adults in a household, the lower is the probability of participation.
- Successively higher educational attainments are associated with lower probabilities of participation.
- Those owning even small quantities of land are more likely to participate in FFW, relative to the landless.
- All occupational groups are associated with higher probabilities of participation, relative to the residual group ‘Others’.
- Both ST and SC households are more likely to participate in FFW, relative to Others/non-SC and ST group.
- Controlling for these effects, annual agricultural wage rate interacted with with ST and SC dummies has significant negative coefficients.

Table 88
Determinants of Participation in FFW (Aggregate)
(with NSS region dummies)

```
Probit regression                                 Number of obs   =      35510
                                                  LR chi2(80)     =    3092.92
                                                  Prob > chi2     =     0.0000
Log likelihood = -6830.9637                       Pseudo R2       =     0.1846

------------------------------------------------------------------------------
         ffw |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    fem_head |   -.160222   .0485805    -3.30   0.001    -.2554381   -.0650059
   ad_female |  -.0007981   .0203908    -0.04   0.969    -.0407634    .0391672
     ad_male |   .1082999   .0196168     5.52   0.000     .0698517     .146748
   ad_p_hhsz |  -.2305397    .058399    -3.95   0.000    -.3449996   -.1160797
    age_h100 |  -.0307085   .5786098    -0.05   0.958    -1.164763    1.103346
     _IagXag |  -.2309901   .6029222    -0.38   0.702    -1.412696    .9507157
  _Iedu_hr_2 |   -.072509    .031002    -2.34   0.019    -.1332718   -.0117463
  _Iedu_hr_3 |  -.1185057   .0329646    -3.59   0.000    -.1831151   -.0538963
  _Iedu_hr_4 |  -.4139964   .0534947    -7.74   0.000    -.5188442   -.3091487
_Iland_opr_2 |   .1332882   .0292398     4.56   0.000     .0759792    .1905972
_Iland_opr_3 |  -.0384507   .0570581    -0.67   0.500    -.1502826    .0733812
 _Ihh_type_1 |   .4810949   .0909989     5.29   0.000     .3027403    .6594495
 _Ihh_type_2 |   1.170428   .0855225    13.69   0.000     1.002807    1.338049
 _Ihh_type_3 |   1.134793   .0877178    12.94   0.000     .9628693    1.306717
 _Ihh_type_4 |   .7239274   .0855413     8.46   0.000     .5562696    .8915852
_Isocial_g~1 |   .4905808   .1981892     2.48   0.013     .1021371    .8790245
_Isocial_g~2 |   .3914669   .1811954     2.16   0.031     .0363305    .7466033
     wages_m |  -.0188206   .0116326    -1.62   0.106    -.0416201    .0039789
    _Iso1Xwa |  -.0057979   .0037913    -1.53   0.126    -.0132287     .001633
    _Iso2Xwa |  -.0066966   .0033402    -2.00   0.045    -.0132433     -.00015
_       cons |  -1.184269   1.075595    -1.10   0.271    -3.292396    .9238575
```

1. Note that the annual agricultural wage rate for males at the state level is used here and interacted with ST and SC dummies.

In another specification, when annual agricultural wage rate is replaced with annual agricultural wage rate for males, both the wage variable itself and its interactions with ST and SC dummies have significant negative coefficients (although weakly in the case of interaction with the ST). These results have an important policy implication: if agricultural wage rates are higher, the demand for FFW and other rural public works (such as the NREG) is likely to be lower. Similar results are obtained with the sub-samples.

As shown below, many of the results are reproduced in the sub-samples for the ST, SC and Others. But there are a few differences as well. In the sub-sample for ST, for example, participation in FFW declines with age of household head but this weakens with age. Participation and education are not inversely related at all levels except at the higest (i.e. above matriculation). Also, participation and landowned are inversely related but in the highest land category. Wage rate, however, does not have a significant effect.

Table 89
Determinants of Participation in FFW (ST)
(with NSS region dummies)

```
Probit regression                                 Number of obs   =       7055
                                                  LR chi2(49)     =     949.03
                                                  Prob > chi2     =     0.0000
Log likelihood = -2365.7627                       Pseudo R2       =     0.1671

------------------------------------------------------------------------------
         ffw |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    fem_head |  -.1277309   .0904303    -1.41   0.158     -.304971    .0495092
   ad_female |   .0179812   .0360164     0.50   0.618    -.0526097    .0885721
     ad_male |       .1245   .0352573     3.53   0.000     .0553969     .193603
   ad_p_hhsz |  -.3490894   .1019803    -3.42   0.001    -.5489672   -.1492117
    age_h100 |  -2.263098   1.034255    -2.19   0.029    -4.290201   -.2359949
     _IagXag |   2.403189   1.107501     2.17   0.030     .2325277    4.573851
  _Iedu_hr_2 |   .0400414   .0527011     0.76   0.447    -.0632509    .1433337
  _Iedu_hr_3 |   .1885591   .0611139     3.09   0.002      .068778    .3083402
  _Iedu_hr_4 |  -.1773284   .1098011    -1.61   0.106    -.3925346    .0378778
_Iland_opr_2 |  -.0395564   .0550527    -0.72   0.472    -.1474578     .068345
_Iland_opr_3 |  -.5526957   .1189595    -4.65   0.000    -.7858521   -.3195394
 _Ihh_type_1 |   .3490128    .184351     1.89   0.058    -.0123085    .7103341
 _Ihh_type_2 |   1.083004   .1595055     6.79   0.000     .7703787    1.395629
 _Ihh_type_3 |   1.051767   .1652883     6.36   0.000     .7278082    1.375726
 _Ihh_type_4 |   .7680353   .1587626     4.84   0.000     .4568664    1.079204
     wages_p |   .0279726   .0258334     1.08   0.279      -.02266    .0786052
        cons |  -4.412971   1.941209    -2.27   0.023    -8.217671   -.6082705
```

1. Note that annual agricultural wage rate at the state level is used.

Table 90
Determinants of Participation in FFW (SC)
(with NSS region dummies)

```
Probit regression                                 Number of obs   =       5504
                                                  LR chi2(58)     =     336.77
                                                  Prob > chi2     =     0.0000
Log likelihood = -1241.1488                       Pseudo R2       =     0.1195

------------------------------------------------------------------------------
         ffw |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    fem_head |   .0149735   .1055591     0.14   0.887    -.1919185    .2218654
   ad_female |  -.0605108   .0524324    -1.15   0.248    -.1632764    .0422549
     ad_male |   .0664549   .0500009     1.33   0.184     -.031545    .1644548
   ad_p_hhsz |   .0304799   .1389562     0.22   0.826    -.2418693    .3028291
    age_h100 |  -.5830382   1.371115    -0.43   0.671    -3.270374    2.104298
     _IagXag |   .4382459   1.440669     0.30   0.761    -2.385413    3.261905
  _Iedu_hr_2 |   .0683546   .0730713     0.94   0.350    -.0748626    .2115718
  _Iedu_hr_3 |  -.0222227   .0772191    -0.29   0.774    -.1735694     .129124
  _Iedu_hr_4 |  -.2150183   .1266233    -1.70   0.089    -.4631953    .0331588
_Iland_opr_2 |   .1232049    .066724     1.85   0.065    -.0075717    .2539814
_Iland_opr_3 |  -.1635063   .1782262    -0.92   0.359    -.5128232    .1858106
 _Ihh_type_1 |   .6987819   .2326357     3.00   0.003     .2428244    1.154739
 _Ihh_type_2 |   1.134696   .2224738     5.10   0.000      .698655    1.570736
 _Ihh_type_3 |   1.172159   .2257281     5.19   0.000     .7297403    1.614578
 _Ihh_type_4 |   .9112769   .2282681     3.99   0.000     .4638796    1.358674
     wages_p |  -.0384218   .0129094    -2.98   0.003    -.0637237   -.0131199
        cons |   .3859996   .9662613     0.40   0.690    -1.507838    2.279837
```

1. Note that annual agricultural wage rate at the state level is used.

Table 91
Determinants of Participation in FFW (Others)
(with NSS region dummies)

```
Probit regression                                 Number of obs   =      21537
                                                  LR chi2(68)     =    1783.87
                                                  Prob > chi2     =     0.0000
Log likelihood = -3421.0065                       Pseudo R2       =     0.2068

------------------------------------------------------------------------------
         ffw |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    fem_head |  -.2727353   .0702631    -3.88   0.000    -.4104485   -.1350221
   ad_female |    .029096   .0280023     1.04   0.299    -.0257874    .0839794
     ad_male |   .1283364   .0268523     4.78   0.000     .0757068    .1809661
   ad_p_hhsz |  -.2996983   .0830088    -3.61   0.000    -.4623925   -.1370041
    age_h100 |   1.032553    .840861     1.23   0.219    -.6155048     2.68061
     _IagXag |  -1.426251   .8697771    -1.64   0.101    -3.130983    .2784807
  _Iedu_hr_2 |   -.182951   .0444152    -4.12   0.000    -.2700032   -.0958988
  _Iedu_hr_3 |  -.2744137   .0465201    -5.90   0.000    -.3655915   -.1832359
  _Iedu_hr_4 |  -.5962858   .0730414    -8.16   0.000    -.7394443   -.4531274
_Iland_opr_2 |   .1812337   .0412769     4.39   0.000     .1003326    .2621349
_Iland_opr_3 |    .104168   .0738776     1.41   0.159    -.0406295    .2489655
 _Ihh_type_1 |   .4532845    .119612     3.79   0.000     .2188494    .6877197
 _Ihh_type_2 |   1.260236   .1135319    11.10   0.000     1.037717    1.482754
 _Ihh_type_3 |   1.214836   .1166959    10.41   0.000     .9861162    1.443556
 _Ihh_type_4 |   .6652086   .1127585     5.90   0.000     .4442061    .8862111
     wages_p |  -.0229294   .0094578    -2.42   0.015    -.0414664   -.0043923
        cons |  -1.193275   .6145451    -1.94   0.052    -2.397761    .0112109
```

In the sub-sample for SC, agricultural wage rate and participation in FFW are inversely related. A similar result is obtained when this wage rate is replaced with the male wage rate. Among Others, however, female headship and participation are inversely related; there is a strong negative relationship between education and participation. Landowned and participation are positively linked in the first dummy. All occupational dummies have positive coefficients, implying higher participation relative to the residual occupation 'Others'. Agricultural wage rates have a negative influence on participation in FFW, as in the case of SC.

Welfare Effects of Anti-Poverty Programmes

Taking into account the endogeneity of participation in PDS and FFW, and controlling for the effects of demographic factors, life-cycle effects, endowments of education and land, occupations, and ST and SC affiliations, both anti-poverty programmes have significant welfare enhancing effects. Per capita expenditure is higher in both cases, as shown below. One important difference, however, must be noted. When the probability of participation is low, its effect on expenditure is not significant. However, in the remaining two categories, there are significant welfare enhancing effects. By contrast, all dummies of participation in FFW programme have significant positive effects on expenditure.

Table 92
Expenditure Enhancing Effect of PDS (Aggregate)
(With NSS region dummies)

```
      Source |       SS       df       MS              Number of obs =   78873
-------------+------------------------------           F( 97, 78775) =  599.79
       Model |  9112.57458    97  93.9440678           Prob > F      =  0.0000
    Residual |  12338.4119 78775  .156628523           R-squared     =  0.4248
-------------+------------------------------           Adj R-squared =  0.4241
       Total |  21450.9864 78872  .271972138           Root MSE      =  .39576

------------------------------------------------------------------------------
    lmpce30h |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
  _Ippds_r_2 |  -.0014661   .0060471    -0.24   0.808    -.0133184    .0103863
  _Ippds_r_3 |   .0219861   .0082873     2.65   0.008     .0057432    .0382291
  _Ippds_r_4 |   .0437175   .0111805     3.91   0.000     .0218038    .0656312
    fem_head |  -.0342846   .0050617    -6.77   0.000    -.0442055   -.0243637
   ad_female |  -.1352446   .0024476   -55.26   0.000    -.1400418   -.1304474
     ad_male |  -.1005494   .0022108   -45.48   0.000    -.1048825   -.0962164
   ad_p_hhsz |   .6491585   .0071775    90.44   0.000     .6350907    .6632264
    age_h100 |   .1022123   .0740963     1.38   0.168    -.0430159    .2474405
     _IagXag |   .1677011   .0725823     2.31   0.021     .0254402     .309962
  _Iedu_hr_2 |   .0607404   .0041227    14.73   0.000      .05266    .0688207
  _Iedu_hr_3 |   .1609736   .0040397    39.85   0.000     .1530558    .1688914
  _Iedu_hr_4 |   .3644713   .0054134    67.33   0.000     .3538611    .3750814
_Iland_opr_2 |   .0442897    .003997    11.08   0.000     .0364556    .0521238
_Iland_opr_3 |   .2555286   .0069777    36.62   0.000     .2418523    .2692049
 _Ihh_type_1 |   -.137173   .0061352   -22.36   0.000     -.149198   -.1251481
 _Ihh_type_2 |   -.335644   .0063434   -52.91   0.000    -.3480771   -.3232109
 _Ihh_type_3 |  -.2409556   .0067873   -35.50   0.000    -.2542587   -.2276525
 _Ihh_type_4 |  -.1692167   .0058153   -29.10   0.000    -.1806146   -.1578187
_Isocial_g~1 |  -.1662411   .0054228   -30.66   0.000    -.1768698   -.1556124
_Isocial_g~2 |  -.1008723   .0037989   -26.55   0.000    -.1083182   -.0934265
        cons |   6.592158   .0376262   175.20   0.000     6.518411    6.665905
```

1. For a classification of participation in PDS, see the table below.[36]

[36]
```
  RECODE of |
       ppds |
  (Pr(pds)) |      Freq.     Percent        Cum.
------------+-----------------------------------
      0-0.7 |17,041.3487       21.61       21.61
   0.7-0.81 |   20,957.2       26.57       48.18
  0.81-0.88 | 19,179.255       24.32       72.49
     > 0.88 | 21,696.196       27.51      100.00
------------+-----------------------------------
      Total |     78,874      100.00
```

Table 93
Expenditure Enhancing Effect of FFW (Aggregate)
(With NSS region dummies)

Source	SS	df	MS		Number of obs =	35509
Model	4047.31335	81	49.9668315		F(81, 35427) =	320.63
Residual	5521.00394	35427	.155841701		Prob > F =	0.0000
					R-squared =	0.4230
Total	9568.31729	35508	.269469339		Adj R-squared =	0.4217
					Root MSE =	.39477

lmpce30h	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Ipffw_r_2	.0218795	.0091905	2.38	0.017	.0038659	.0398932
_Ipffw_r_3	.0461331	.0124481	3.71	0.000	.0217345	.0705317
_Ipffw_r_4	.0768076	.0172481	4.45	0.000	.0430007	.1106144
fem_head	-.0252759	.0077102	-3.28	0.001	-.0403881	-.0101638
ad_female	-.126079	.0034829	-36.20	0.000	-.1329055	-.1192524
ad_male	-.1107075	.0034611	-31.99	0.000	-.1174914	-.1039236
ad_p_hhsz	.6322228	.0101205	62.47	0.000	.6123862	.6520594
age_h100	.4309982	.0982638	4.39	0.000	.2383981	.6235984
_IagXag	-.1366398	.1003131	-1.36	0.173	-.3332566	.0599769
_Iedu_hr_2	.0864218	.0059921	14.42	0.000	.074677	.0981665
_Iedu_hr_3	.187409	.0061587	30.43	0.000	.1753379	.1994801
_Iedu_hr_4	.4030437	.0086586	46.55	0.000	.3860725	.4200149
_Iland_opr_2	.046405	.0054331	8.54	0.000	.035756	.057054
_Iland_opr_3	.2202946	.0099348	22.17	0.000	.2008221	.2397671
_Ihh_type_1	-.1665912	.0095337	-17.47	0.000	-.1852775	-.1479049
_Ihh_type_2	-.3792556	.0128887	-29.43	0.000	-.4045179	-.3539932
_Ihh_type_3	-.2764889	.0130776	-21.14	0.000	-.3021215	-.2508564
_Ihh_type_4	-.2094983	.0105258	-19.90	0.000	-.2301293	-.1888673
_Isocial_g~1	-.2061092	.0071886	-28.67	0.000	-.220199	-.1920194
_Isocial_g~2	-.1066978	.0056223	-18.98	0.000	-.1177177	-.0956778
cons	6.28183	.0709563	88.53	0.000	6.142753	6.420906

1. For a classification of participation in FFW, see the table below[37].

Concluding Observations

Our analysis of the 61st round of the NSS confirms higher incidence and intensity of poverty among the STs and SCs, relative to non-ST/SC. A decomposition of poverty gap between these two groups and Others corroborates earlier findings. Two components -the characteristics and structural- are quantified. The first focuses on differences in household characteristics-including demographic, ownership of land, educational attainments, location, and occupations-and the second on differences in returns to these characteristics. A large part of the poverty gap between the STs and Others is due to

[37]

RECODE of pffw (Pr(ffw))	Freq.	Percent	Cum.
0-0.007	6,855.964	19.31	19.31
0.007-0.026	8,376.8283	23.59	42.90
0.026-0.078	10,991.219	30.95	73.85
> 0.078	9,285.98831	26.15	100.00
Total	35,510	100.00	

differences in returns or structural differences while among the SCs it is due largely to differences in characteristics.

Whether these structural differences are a reflection of discrimination is far from self-evident. There are several issues. One is the meaning of discrimination itself. Generally, it is taken to mean that equal persons are treated unequally (the decomposition results, for example differ somewhat when the reference group is a composite category representing all three groups considered here-the STs, SCs and Others). A second issue is: should discrimination be limited to differences in returns to assets, as various studies reviewed here show (including the present analysis) or should it be broadened to include historical factors associated with differential access to endowments? There is abundant evidence corroborating that the SCs and STs, compared to upper caste Hindus, are more likely to be ill, less likely to be educated, more likely to cultivate land, and to live in a climate of fear and oppression. If anything, the interpretational problems are compounded in the broader interpretation but that alone cannot be a reason for preferring a limited and potentially misleading interpretation.

Even with regard to measurement of 'current' discrimination, there are at least two approaches[38]. One is the statistical approach in which the average performance of a group determines remuneration. So (average) wage disparity may be justified in terms of economic incentives. An alternative approach focuses on taste for discrimination where wage disparity occurs despite economic incentives. Empirically, however, it is difficult to disentangle these effects (wage rates for women under the Employment Guarantee Scheme, for example, are generally lower). But recent experimental research also underlines the role of identity and mistrust of the reward system by the disadvantaged, resulting in undermining of their motivation and efforts.

The policy design therefore cannot be limited to enhancing the endowments of the STs, SCs and other disadvantaged groups-women from these groups, for example, have to bear the double burden of deprivation-but must also address the issue of lower returns. While some of the disparity may have elements of discrimination, subject of course to the measurement problems, it is arguable that lower quality of education, location in remote, inaccessible areas with limited infrastructure and market access cause poverty and inequity to persist.

[38] In a recent contribution, Bertrand et al. (2005) argue emphatically that psychological evidence points to implicit discrimination, as opposed to explicit discrimination in the two approaches delineated here. This rests on the presumption that conscious processing activates different regions in the brain than does unconscious processing. In fact, it is argued that even theoretically controllable behaviour operates with greater automaticity under certain conditions-time pressure or other cognitive load, and ambiguity. An example cited is African-American cab drivers receive lower tips than white cab drivers. I that case, it is not obvious what is to be made of explicitly stated beliefs or judgments. A further complication arises when personal identity is multi-dimensional, as articulated by Sen (2006). As he observes "In our normal lives, we see ourselves as members of a variety of groups-we belong to all of them. A person's citizenship, residence, geographic origin, gender, class, politics, profession, employment, food habits,……..social commitments etc. make us members of a variety of groups. Each of these collectivities, to all of which this person simultaneously belongs, gives her a particular identity. None of them can be taken to be the person's only identity or singular membership category" (p.5). This of course does not rule out some dimensions assuming greater importance under specific situations.

While quotas in village Panchayats, state and central legislatures, in schools and colleges, and employment are associated with favourable effects on disadvantaged groups, acute poverty and disparities in living standards persist. An issue that our analysis highlights is that identity could have a potentially important role too in perpetuating deprivation. Salience of caste and tribal affiliations together with mistrust of the reward system (or belief system) –confirmed by recent experimental evidence-have to be dealt with in designing affirmative action.

What is perhaps important from a policy perspective is that the social categories and behavioural prescriptions can be influenced (through, for example, expansion of education and employment opportunities). More specifically, as Ackerlof and Kranton (2000) emphasize, providing employment and training facilities outside a poor neighbourhood would avoid the negative interactions with the non-conformists (or those with 'oppositional' identities). In the context of expansion of schooling, it is imperative that those from socially excluded groups are protected against a sense of alienation or loss of identity in pursuing an activity that conforms to the dominant culture. Finally, the rhetoric and symbolism of the affirmative action debate matters as it influences the level of social exclusion. One view is that portraying the ST and SC as victims in affirmative action programmes may prove costly to these groups and exacerbate their oppositional identities or non-conformist behaviour. But if the same action or programme is projected as an "apology for previous discrimination and an invitation for…admission to the dominant culture" (p. 90) it could reduce the level of social exclusion. In micro-finance, for example, mixed self-help groups may allow greater interaction between social groups than segregated groups. One of the reasons cited for the Employment Guarantee Schemes's spectacular role in mobilization of the rural poor was that working together helped in overcoming caste, religious and ethnic barriers. Alongside, strengthening of rural infrastructure and easier market access would facilitate mobility, intermixing of different groups, and expand opportunities for more productive employment.

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Annex

1. Scheduled Castes, Scheduled Tribes and the Caste System

Caste is defined as a named group of persons characterised by marriage within a group, hereditary membership, and a ritual status or occupation (Beteille, 2007). The Hindu society is divided into Brahmans (priests), Kshatriyas (warriors), Vaisyas (traders), Sudras (menial workers), and Ati Sudras (the former untouchables who engaged in the most menial jobs). It is claimed that legislation after independence entitling former untouchables, the Scheduled Castes (SCs), to reserved jobs in government employment and educational institutions has mitigated their deprivation. However, there is documentation of caste-related discrimination and deprivation in rural India (Lanjouw and Stern, 1991, Shah, 1997, Beteille, 2007).

Distinct from Hindu society, more than 50 million Indians belong to tribal communities (Kijima, 2006). They are largely concentrated in the forested, hilly and mountainous areas. By the Government of India Act of 1935, the areas with high concentration of tribal population were classified as "excluded" or "partially excluded" areas. They were placed under the provincial rule of the governor, and thus not subject to the laws of the central legislature. The Indian constitution incorporated these provisions, and the tribes listed in it are referred to as Scheduled Tribes (STs). They have limited access to markets, and other infrastructure such as health and education facilities, road connections and electricity, communication networks, and irrigation. As a result, most of the STs migrate seasonally to make ends meet (Kijima, 2006).

2. Methodology used in Earlier Work

Model 1

A ratio of per capita expenditure (Y) to the poverty line (Z) i.e. , **R = Y/Z**. the regression equation takes the form

$$\text{Log } \mathbf{R} = \mathbf{X}\beta + e \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

where **R, X** and β are Nx1 vector, an NxK matrix of explanatory variables, and a Kx1 vector of coefficients. The probability of being in poverty is obtained by computing **Pr** (**log R<0**); and assuming the normal distribution, $\Phi(\cdot)$, i.e., $\Pr(e<-X\beta)= \Phi(X\tilde{\beta}$, where $\tilde{\beta} = -\beta/\sigma$ *and* σ is the standard deviation of the error term (e). if $X\beta$ is larger or $X\tilde{\beta}$ is smaller, the ratio of per capita expenditure the poverty line increases and the likelihood of being in poverty decreases. Equation (1) is estimated by ML, as it provides the covariance matrix (β, σ), which allows computation of $\tilde{\beta}$, and to perform significance tests for the decomposition. This equation is estimated separately for SC, ST and non-scheduled households.

As stated earlier, these components refer to differences in characteristics and coefficients. The procedure used is as follows:

First, the coefficients, β, are transformed into $\beta = \tilde{-\beta / \sigma}$. The probability of being in poverty is then obtained from $\Phi(X \tilde{\beta})$, where Φ is the standard normal cumulative distribution function. Algebraically, the differences in the average probability of being poor between two groups A and B, $(\overline{P_A} - \overline{P_B})$, where A=scheduled castes or tribes and B= non-scheduled, is decomposed into characteristic and coefficient effects.

$$\overline{P_A} - \overline{P_B} = \overline{\left[\Phi(X_A \widetilde{\beta_B}) \right.} - \overline{\Phi(X_B \widetilde{\beta_B}) \left. \right]} + \overline{\left[\Phi(X_A \widetilde{\beta_A}) \right.} - \overline{\Phi(X_A \widetilde{\beta_B}) \left. \right]} \quad \ldots(2)$$

where $\tilde{\beta}_A = -\beta_A / \sigma_A$ and $\tilde{\beta}_B = -\beta_B / \sigma_B$, β_A and β_B are sets of estimated coefficients for each group, and σ_A and σ_B are the standard deviations of error terms (e_A and e_B); X_A and X_B are the explanatory variables used in the regressions of (1), and the bar represents sample average.

An extension of this procedure decomposes the characteristic and coefficient effects for each variable chosen (e.g. education, occupation)[39].

Model 2

In a series of models, Borooah (2005) experiments with alternative decompositions. A selection of these models that are more relevant for our study and their findings are reviewed below.

(a) Log Linear Model

This is similar to the model used by Gang et al. (2006) except that the dependent variable is a measure of earnings, and the right side variables include interactions of SC and ST with location and other household characteristics (e.g. education of household head, land owned, other productive assets). The estimation is based on the NCAER household survey of rural India in 1994. The focus is on income disparity between SC and Hindu, and ST and Hindu households.

A general form of the estimating equation is

$$\log (\text{hinc}_i^k) = \theta^{k'} X_i^k \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(3)$$

where θ^k is the coefficient vector for social group k and X_i^k is a vector of household characteristics/endowments for ith household in kth group (k=Hindu, SC, and ST).

[39] For details, see Gang et al. (2006).

Specifically, the estimating equation is:

$$\log(hinc_i)=\alpha_0+\alpha_1 x\ \text{central}_i+\alpha_2 x\ \text{south}_i+\alpha_3 x\ \text{west}_i+\alpha_4 x\ \text{east}_i+\alpha_5 \text{x st}_i+$$

$$\alpha_6 \text{x sc}_i+\alpha_7 \text{x X}_i+\beta_1 \text{x (st}_i \text{x central}_i)+\beta_2\ \text{x (st}_i \text{x south}_i)+\beta_3 \text{x (st}_i \text{x west}_i)$$
$$\beta_4\ \text{x (st}_i \text{x east}_i)+\beta_5\ \text{x (sc}_i\ \text{x central}_i)+\beta_6\ \text{x (sc}_i\ \text{x south}_i)$$
$$\beta_7 \text{x (sc}_i \text{x west}_i)+\beta_8\ \text{x (sc}_i\ \text{x east}_i)+\gamma_1\ \text{x (central}_i\ \text{x X}_i)$$
$$\gamma_2\ \text{x (south}_i\ \text{x X}_i)+\gamma_3\ \text{x (west}_i\ \text{x X}_i)+\gamma_4\ \text{x (east}_i \text{x X}_i)$$
$$+\ \delta_1\ \text{x (st}_i\ \text{x X}_i)+\ \delta_2\ \text{x (sc}_i\ \text{x X}_i)+\varepsilon_i \text{.....(4)}$$

The α coefficients measure the separate effects of the regional variables (e.g. central)- $\alpha_1-\alpha_4$; the social group variables (α_5 and α_6), and X_i (α_7) on household income; the β coefficients allow the effect of a household belonging to a particular social group to vary by region; the γ coefficients allow the effect of X_i to vary by region; and the δ coefficients allow the effect of X_i on the income of household i to vary by social group; and ε_i is an error term.

In general, the $\alpha_0, \alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_7$ and the γ_1, $\gamma_2, \gamma_3 . \gamma_4$ may be thought of as the "Hindu" coefficients; α_5, β_1, β_2, β_3, β_4, and δ_1 may be thought of as the additional effects from being a ST household. Similarly, α_6, β_5, β_6, β_7, β_8, and δ_2 may be interpreted as as the additional effects from being an SC household.

A point of departure of Borooah (2005) is that, unlike van de Walle and Gunewardena (2001), and Gang et al. (2006), a consolidated regression is run for all social groups with interactions to capture the effects of ethnicity, region and other attributes. While this has some merit in so far as the effects of all these variables are captured in one regression, it needs to be extended to analyse gaps in poverty incidence between, say, ST and Hindu households. An additional assumption of normality could be introduced and after modifying the regression coefficients by the standard deviation of the error term (along the lines of Gang et al. 2006), estimates of poverty could be constructed.[40]

Using the Blinder-Oaxaca decomposition, income inequality is decomposed as follows:

[40] In a subsequent exercise, Borooah (2005) uses different fractions of the median income as poverty lines. This is not persuasive as an official poverty line exists, and variants of it could have been considered.

$$\overline{\log(hinc^H)} - \overline{\log(hinc^{SC})} = \theta^{H'}(\overline{X} - \overline{X^{SC}}) + (\theta^H - \theta^{SC})' \overline{X}^{SC} \quad \text{.....(5)}$$

where

θ^k is the coefficient vector for social group k and X_i^k is the vector of values of determining variables for ith household in kth group. Here the difference in mean incomee between, say, Hindu and SC (or ST) households is decomposed by asking what the mean income of the latter would be if they were treated as Hindus. (Alternatively, it could be asked what the mean income of Hindus would be if they were treated as SC (or ST) households).

(b) Multinomial Probability Model of Poverty

This is based on different poverty lines: not poor comprise households with incomes above 75 per cent of the median income; mildly poor are households with incomes between 75 per cent and 50 per cent of the median income; moderately poor are those with incomes between 50 per cent and 25 per cent of the median income; and the remaining are very poor.

Suppose there are N households (indexed, i=1, 2, N) which can be placed in G mutually exclusive and collectively exhaustive groups g =1……..G, each group containing N_g households. Then, under a multinomial logit model, the likelihood of a household, from community g, being in income quintile j (or poverty group) is:

$$\text{Prob } (y_i = j) = F(\mathbf{X}_i^g \hat{\beta}_j^g) \qquad (6)$$

where $\mathbf{X}_i^g = \left\{X_{ik}^g, k = 1.....K\right\}$ represents the vector of observations, for household i of group g, on K variables which determine the likelihood of it being in a particular quintile/poverty group, and $\hat{\beta}_j^g = \left\{\hat{\beta}_{jk}^g, k = 1.....K)\right\}$ is the associated vector of coefficient estimates for that group and for the poverty outcome.

The average probability of a household from a group g being in a poverty group j is:

$$\overline{P}_j^g = P(X_i^g, \beta_j^g) = N_k^{-1} \sum_{i=1}^{n_k} F(X_i^g \hat{\beta}_j^g) \qquad (7)$$

Model 3

In a significant recent contribution, Kijima (2006) offers a comparative analysis of deprivation among ST, SC and non-ST/SC households in rural India over the period 1983-1999, based on various rounds of the NSS. He also uses a decomposition procedure which in part overcomes the ambiguity in measuring the contributions of attributes and structure to deprivation of the SCs and STs, relative to non-SC/ST group. Some of the

findings reinforce the basic motivation for the present study as well as add some new dimensions to anti-poverty strategy.

The basic model specification is

$$y_{isj} = X_{isj}\beta_s + v_j + u_{isj} \ldots\ldots\ldots\ldots\ldots\ldots \quad (8)$$

where y_{isj} denotes log of per capita expenditure of ith household, sth group and living in jth location. The right side variables include household characteristics (X_{isj}), and location fixed effects (v_j). The household characteristics include demographic variables, characteristics of household head, human capital, and land. Two specifications have been used, one with region dummies and another with village fixed effects to capture differences in local infrastructure, geographic environment and prices.

In addition to the Blinder- Oaxaca decomposition, he experiments with the Neumark (1988) decomposition. The predicted mean expenditure difference is decomposed into two components:

$$\overline{y_n} - \overline{y_s} = (\overline{X_n} - \overline{X_s})\,\beta + \left[\overline{X}_n(\beta_n - \beta) - \overline{X}(\beta_s - \beta)\right] \ldots\ldots\ldots\ldots\ldots\ldots (9)$$

where β represents no-discrimination returns (obtained from a regression based on a pooled sample of SC, ST and non ST/SC groups.

Model 4

This model is employed by Borooah et al. (2007) to analyse occupational choices across ethnic groups:

$$\text{Log}\left[\frac{\Pr(Y_i = j}{\Pr(Y_i = 1)}\right] = f(\text{landholding, social group, education, state, sector}) \ldots..(10)$$

where the dependent variable Y_i takes the values 1, 2 or 3, depending upon whether person i was self-employed (own-account worker), a regular salaried or wage worker or a casual labourer. With self-employment (Y_i =1) as the base category, the model consists of two equations (Y_i=2, Y_i=3). It is estimated for a sample of prime-age men who were in non-family employment.

Model 5

This summarises the specification used by Pande (2003).

In equation (11), for the sth state at time t, Y_{st} is a policy outcome, R_{st} is a vector whose elements are SC and ST reservations, α_s and β_t are state and year fixed effects, P_{st*} is a vector whose elements are SC and ST *census* population shares, P_{st} is another vector of

SC and ST population shares in the *current* population, and X_{st} is a third vector whose elements are (lagged) state income, population density, and an election year dummy.

$$y_{st} = \alpha_s + \beta_t + \gamma R_{st} + \phi P_{st*} + \delta P_{st} + \eta X_{st} + \varepsilon_{st} \quad \text{.....(11)}$$

3. Decomposition of Poverty Gap

Table A.1
Determinants of Poverty in the Aggregate Sample
(With NSS Region dummies but without ST and SC dummies)

```
Probit regression                                 Number of obs   =      77781
                                                  LR chi2(89)     =   21369.83
                                                  Prob > chi2     =     0.0000
Log likelihood =  -32759.86                       Pseudo R2       =     0.2459

------------------------------------------------------------------------------
        poor |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    fem_head |   .0652693   .0203476     3.21   0.001     .0253888    .1051499
   ad_female |   .3642278    .009383    38.82   0.000     .3458374    .3826183
     ad_male |   .2497574   .0090604    27.57   0.000     .2319992    .2675155
   ad_p_hhsz |  -1.928896   .0305701   -63.10   0.000    -1.988812    -1.86898
    age_h100 |  -.7330166   .2703005    -2.71   0.007    -1.262796   -.2032374
     _IagXag |  -.3225256   .2770953    -1.16   0.244    -.8656223    .2205712
  _Iedu_hr_2 |  -.2293317    .015139   -15.15   0.000    -.2590036   -.1996598
  _Iedu_hr_3 |  -.4964407   .0154506   -32.13   0.000    -.5267233   -.4661581
  _Iedu_hr_4 |  -.9095263   .0232282   -39.16   0.000    -.9550526   -.8639999
_Iland_opr_2 |  -.1561546   .0140569   -11.11   0.000    -.1837057   -.1286035
_Iland_opr_3 |   -.672018   .0315579   -21.29   0.000    -.7338704   -.6101657
 _Ihh_type_1 |   .1507345   .0264454     5.70   0.000     .0989025    .2025664
 _Ihh_type_2 |   .6966279   .0244283    28.52   0.000     .6487493    .7445064
 _Ihh_type_3 |   .4165235   .0280127    14.87   0.000     .3616195    .4714274
 _Ihh_type_4 |   .1731995   .0252816     6.85   0.000     .1236485    .2227504
       _cons |  -1.521414   .3559666    -4.27   0.000    -2.219096   -.8237324
```