



RESEARCH ARTICLE

Income Inequality and Caste in Village India

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Abstract: In this paper, we examine inequality in incomes between households of different castes in rural India, using a unique dataset comprising household data from a cross-section of eight villages across four States. The focus of this paper is on Dalit or Scheduled Caste households. We begin with very simple measures of differences between groups, such as proportional representation in different quintiles and the frequency distribution of households across income levels in different social groups. We then estimate a standard GE(2) inequality index along with its decomposition by caste. Lastly, we compute an alternative benchmark for assessing the share of between-group inequality in total inequality as suggested by Elbers, Lanjouw, Mistiaen, and Ozler (ELMO 2008). Our analysis shows high levels of income inequality between households of different caste groups.

Keywords: income, between-group inequality, caste, India, village.

INTRODUCTION

In recent years, the rate of economic growth in India has accelerated: per capita income grew at 10.7 per cent per annum at current prices and 6 per cent per annum at constant prices during the Tenth Plan period (2002–07), as compared to 3 per cent during the Ninth Plan period (1997–2002). Studies of the nature of this growth, and whether it is equalising or unequalising, are, however, seriously lacking on account of lack of data on income distribution.

There is a very thin literature on income inequality in India, since most studies of so-called income inequality actually deal with expenditure inequality (see Swaminathan and Rawal 2011). The few available studies, of which only a handful look at income inequality in rural India, indicate that levels of inequality are high in rural India. Most of these studies draw upon multi-State sample surveys conducted by the National

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Council of Applied Economic Research (NCAER). Based on the NCAER data, Azam and Shariff (2009) estimate that the Gini coefficient for rural incomes rose from 0.46 in 1993–94 to 0.50 in 2004–05. Using the same dataset, Vanneman and Dubey (2010) indicate that the Gini coefficient for rural incomes was 0.54 in 2004–05.¹ There are some problems with the quality and reliability of the data on household incomes in the NCAER surveys, particularly the 1993 survey. Nevertheless, these studies give us a rough order of magnitude of income inequality at the national level. In addition, village surveys indicate extremely high levels of income inequality (Swaminathan and Rawal 2011).

We also know that caste continues to play a significant role in economic life in village India, and, specifically, that persons belonging to the Scheduled Castes (also termed Dalits) face discrimination, and are disadvantaged in respect of social and economic attainments. There is both theoretical and empirical work on the discrimination against Dalit households and their position relative to other caste and social groups (Thorat 2009, Deshpande 2011).

In terms of economic status, however, most of the literature focuses on differences in consumption expenditure (from National Sample Surveys), and poverty is defined on the basis of per capita consumption expenditure. It is well established that per capita monthly expenditure among Dalits (and Scheduled Tribes) is lower than among others in rural India (Thorat 2007).² Further, and not surprisingly, the incidence of poverty is higher among Scheduled Castes than others. Even after taking account of population shares, the disparity ratio is less than 1, indicating that Scheduled Caste households accounted for a less than proportionate share of total consumption expenditure, and disparity ratios rose between 1983 and 2000 at the all-India level and in all States (Thorat and Mahamallik 2007).

In this paper, we examine the role of caste in observed inequality in incomes in rural India, using a unique dataset comprising household data from a cross-section of eight villages across four States. The specific focus of this paper is on Dalit or Scheduled Caste households. The only similar analysis is a recent paper based on panel data for two villages, Palanpur in Uttar Pradesh and Sugao in Maharashtra (Lanjouw and Rao 2011).³

¹ See, also, Desai *et al.* (2010) and Borooah (2005).

² See, also, Saggari and Pan (1994), Kijima (2006), Deshpande (2000), and Thorat (2009). In the literature, it is quite common for expenditure inequality to be termed income inequality.

³ In this paper, income inequality is decomposed by caste subgroup using conventional measures as well as the ELMO (Elbers, Lanjouw, Mistiaen, and Ozler 2008) approach. The paper is not exclusively focused on Scheduled Castes, but it shows that in Palanpur, the Jats (Scheduled Castes) did not share in the rise in prosperity of the village population.

Table 1 *Location and agro-ecology of villages surveyed, 2005 to 2007*

Village	Block	District	State	Agro-ecological type
Ananthavaram	Kollur	Guntur	Andhra Pradesh	Canal-irrigated, paddy
Bukkacherla	Raptadu	Anantapur	Andhra Pradesh	Dry and drought-prone, groundnut
Kothapalle	Thimmapur	Karimnagar	Andhra Pradesh	Groundwater-irrigated, multicrop system
Harevli	Najibabad	Bijnor	Uttar Pradesh	100% canal-irrigated with supplementary groundwater, wheat and sugarcane
Mahatwar	Rasra	Ballia	Uttar Pradesh	Groundwater-irrigated, wheat-paddy rotation
Warwat				
Khanderao	Sangrampur	Buldhana	Maharashtra	Rainfed, cotton
Nimshirgaon	Shirol	Kolhapur	Maharashtra	Irrigated, sugarcane and multicrop system
25 F Gulabewala	Karanpur	Sri Ganganagar	Rajasthan	Canal and groundwater-irrigated, cotton, wheat and mustard

Source: Survey data.

DATASET

The income data used in this paper come from the Project on Agrarian Relations in India (PARI), a project to study village economies in different agro-ecological regions of India.⁴ Between 2005 and 2007, household surveys were undertaken in eight villages: three in Andhra Pradesh, two in Uttar Pradesh, two in Maharashtra, and one in Rajasthan (Table 1). In 2005–06, in-depth census and sample surveys were conducted in three villages of Andhra Pradesh: Ananthavaram, a village in the paddy-growing region of Guntur district; Bukkacherla, a village in the dry and drought-prone district of Anantapur; and Kothapalle village in Karimnagar district, a groundwater-irrigated region of north Telengana. This was followed in June 2006 by census-type surveys in two villages of Uttar Pradesh: Harevli, drawn from the canal-irrigated, wheat-growing district of Bijnor; and Mahatwar in Ballia district, selected from a groundwater-irrigated, wheat and paddy-growing belt in eastern Uttar Pradesh. In 2007, surveys were conducted in two villages of Maharashtra. Nimshirgaon is located in Kolhapur district, and has relatively prosperous agriculture based on irrigated sugarcane, and a variety of vegetable and fruit crops. By contrast, Warwat Khanderao is a village in the unirrigated cotton-growing tracts of Vidarbha, in Buldhana district. A census survey was also completed in 25 F Gulabewala village

⁴ For objectives of PARI and design of the surveys, see www.agrarianstudies.org.

of Sri Ganganagar district, Rajasthan, in 2007. With irrigation from the Gang Canal project, the main crops cultivated in this village were wheat, rapeseed, cotton, cluster beans, and fodder crops.

A brief description of the survey villages follows.⁵

Ananthavaram village is located in Kollur mandal, Guntur district. At the Census of 2001, the population of Ananthavaram was 3,100 persons (1,559 males and 1,541 females). Our village survey of 2005 covered 2,424 persons in 667 households. Ananthavaram is a multi-caste village with a significant Dalit population (Malas and Madigas together constitute 45 per cent of the population).

The village is irrigated by the waters of the Krishna river. Supplementary irrigation from groundwater is almost the norm on land officially classified as being under the canal irrigation system. In the kharif (monsoon) season, paddy cultivation dominates the agriculture of the village (96.9 per cent of the cropped area was sown to paddy). The two most important crops of the rabi (winter) season were maize and black gram. Land hunger is acute in Ananthavaram: 65 per cent of the households did not own any agricultural land, and 65 per cent did not operate any land. The Gini coefficients for ownership of land and operational holding of land were 0.89 and 0.83.

Bukkacherla village is located in Raptadu mandal of Anantapur district. The mandal headquarters, Raptadu, is 8–9 kilometres away, and Anantapur, the nearest town and railhead, is at a distance of 14–15 kilometres. The approach road to the village is not an all-weather road and is difficult to travel on during the monsoon.

Our census survey of 2005 covered 1,220 persons and 292 households. At the Census of 2001, the village had 296 households and a population of 1,383 persons. Households of the dominant landholding Kapu caste constituted 40 per cent of the households, and Dalit (Mala and Madiga) households constituted 20 per cent.

Typically, there is a single agricultural season in the village with cultivation occurring mainly in the kharif season. Cultivation of oilseeds and pulses predominated in Bukkacherla: the two main crops were groundnut and red gram. The incidence of landlessness in Bukkacherla is not as high as in Ananthavaram. In Bukkacherla, only 15 per cent of households did not own land and 18 per cent did not operate land. The Gini coefficient for both ownership of land and operational holding of land was 0.58.

Kothapalle P.N. (Post Nustlapur) village is located in Thimmapur (Lower Maner Dam Colony) mandal, Karimnagar district, in the south Telangana region of Andhra Pradesh. The village is at a distance of 5 kilometres from the mandal headquarters at Thimmapur (which is also the nearest police station). The nearest town is Karimnagar,

⁵ For further details, see www.fas.org.in

at a distance of 16 kilometres on a State highway. Our village census survey covered 1,430 persons in 372 households. This is a multi-caste village. Dalit households accounted for 30 per cent of the population. In Kothapalle, there has been a clear movement out of agriculture, especially among male workers.

Typically, there is a single agricultural season in the village, the kharif season. The construction of the Lower Maner Dam, however, has raised the water table by improved recharge of groundwater in the village. The irrigated area of the village increased by 232 acres between 1991 and 2001 on account of increased groundwater. The village data reveal a complex cropping system. The two most important crops were maize and paddy. There were mango orchards and other fruit trees (lime, mango, coconut, and pomegranate), accounting for almost 5 per cent of the gross cropped area. Tapping toddy from palmyra trees was an important village occupation. Almost one-half of the households in the village have neither ownership nor operational holdings of agricultural land.

Harevli village is located in Najibabad block of Bijnor district in western Uttar Pradesh. There is no all-weather road leading to the village, and the main mode of transport from the village to Mandavli, the nearest town, is by horse and bullock-cart. Harevli is a small village in terms of population (not in area): the population was 668 persons at the Census of 2001. At the time of our survey, 115 households and 674 persons were resident in the village. The dominant caste was Tyagi. However, in population terms, Dalit households (Chamars and Valmikis) comprised 38 per cent of total households.

Agriculture is the mainstay of the economy of Harevli. Sugarcane was the most important crop; wheat, paddy, and fodder crops were also cultivated. Irrigation from a public canal, part of the Eastern Ganga Canal project, provides water during the kharif season, and tubewells (with both diesel and electric pumpsets) provide water for irrigation throughout the year. Most of the tubewells were owned by the land-owning Tyagi households. There is a high degree of inequality in land ownership in the village. In aggregate, 33 per cent of the households in Harevli were landless.

Mahatwar village is in Rasra block, Ballia district, in eastern Uttar Pradesh. Mahatwar is located just off the highway linking Rasra to Mau, and has access through bus and jeep services to nearby towns as well as larger cities like Varanasi. At the time of our survey, there were 160 households and 1,150 persons resident in the village. Mahatwar is a multi-caste village with 10 different castes. Dalit (Chamar and Dusad) households constituted the majority: 94 households or 59 per cent of all households.

The major crops grown in Mahatwar were paddy during the kharif season and wheat (sometimes intercropped with mustard) during the rabi season. Irrigation was from groundwater, using tubewells energised by diesel or electricity. The pattern of land ownership was such that about 20 per cent of the households had no land and 71 per cent owned less than 1 acre of land. Non-agricultural occupations, both within and outside the village, were an important source of income to resident households.

Warwat Khanderao belongs to Sangrampur tehsil of Buldhana district in the Vidarbha region of Maharashtra. The nearest town is Shegaon, at a distance of 20 kilometres from the village, linked by a concrete road. At our survey, there were 250 households in the village with a population of 1,308 persons (at the Census of 2001, the population was 1,447). The major caste in the village was Kunbi (43 per cent of all households).

The major crop cultivated in 2007 was cotton, using both Bt (transgenic) and non-Bt seeds. Other crops included groundnut, sunflower, green gram, sesamum, jowar, maize, pulses, wheat, red gram, and black gram. The village had no irrigation. Only 26 per cent of all households did not own any agricultural land. The median extent of household land ownership was 3.5 acres (excluding the landless), which is not high, given that it is mainly dry land.

Nimshirgaon is a village in Shirol taluk of Kolhapur district, in the sugarcane-growing region of western Maharashtra. It is connected by an all-weather road to the highway. The number of households in our survey listing was 768 with a population of 3,515 persons (the Census 2001 population of the village was 4,515). Nimshirgaon is a multi-caste village with almost one-third of the households belonging to the Jain community and another one-third to the Scheduled Castes (mainly Mahars and Chamars).

Agriculture in Kolhapur district is relatively modern and dynamic. Sugarcane is the major crop; soyabean, pulses, and millets are also cultivated, as are a variety of vegetables and fruit (including grape and mango). Irrigation is from a water supply system linked to the Krishna river. There are also hundreds of open wells, borewells and tubewells in the fields belonging to the village residents. The majority of cultivators had marginal (28 per cent) or small holdings (24 per cent) of land. Under irrigated conditions, the scale of operation of a cultivator with, say, 2 acres, is very different in Nimshirgaon from that in Warwat Khanderao.

The landless comprised 28 per cent of all households. Among Dalits, the proportion of the landless was 57 per cent.

25 F Gulabewala is a village in Sri Ganganagar district in Rajasthan. The village is about 25 kilometres from Sri Ganganagar town and is connected by an all-weather road. In 2007, 204 households lived in the village, and the main castes were Jat Sikh, Mazhabi (Dalit) and Nayak (Dalit).

The village is irrigated by the Gang Canal project. The main crops cultivated in Gulabewala were wheat, rapeseed, cotton, cluster beans, and fodder crops. Land distribution in the village is extremely unequal. About 65 per cent of all households were landless. At the other end of the distribution, the largest landowning household had about 287 acres of land, and 31 households had more than 30 acres of land each. Agricultural land was owned primarily by Jat Sikh households; only 3 Dalit households, out of a total of 123 resident Dalit households, owned any agricultural

Table 2 *Number of households (HHs) by social group, study villages*

Village	Dalit	Adivasi	Muslim	OBC	Other Caste Hindu	All Other households	Total households	Dalit households as % of all households
Ananthavaram	283	44	18	131	190		667	42.4
Bukkacherla	58		8	98	128		292	19.8
Kothapalle	118	11	5	150	87		372	43.3
Harevli	41		14	25	32		112	36.6
Mahatwar	94			53	13		160	58.8
Nimshirgaon	247		47	61	118	285*	757	32.6
Warwat								
Khanderao	25		53	122		50**	250	10.0
25 F								
Gulabewala	123			78	3		204	60.2

Notes: * These include 245 Jain households and 40 households belonging to Nomadic Tribes.

** These households belong to Nomadic Tribes.

OBC stands for Other Backward Classes.

Source: Survey data.

land. Another important feature of agriculture in the village was the widespread employment of long-term Dalit workers by large landowners.

Table 2 shows the distribution of households by caste and social group in each of the survey villages. Dalit households accounted for a sizeable proportion of all households in six villages. Dalit households comprised less than one-fifth of all resident households in Bukkacherla and Warwat Khanderao, both rainfed villages. Dalit households comprised the majority in two villages: Mahatwar in eastern Uttar Pradesh and 25 F Gulabewala in canal-irrigated western Rajasthan. Muslim households were few in number in most of the villages, and were a significant presence only in Warwat Khanderao (where they accounted for 21 per cent of households). Adivasis or Scheduled Tribes were present in two of the villages in Andhra Pradesh, but we have data on their household incomes for only one village, Ananthavaram.

METHODOLOGY

There is a growing literature on inter-group inequality that extends beyond the traditional decomposition of inequality into within-group and between-group components.⁶ Specifically, there is an interest in looking at not just inequality, but also at polarisation (understood as separation or the absence of middleness).

In this paper, we begin with very simple measures of differences between groups, such as proportional representation in different quintiles, which is termed

⁶ Jayadev and Reddy (2011), Lanjouw and Rao (2011), and other papers in *World Development*, February 2011.

representational inequality in a recent paper by Jayadev and Reddy (2011). We also look at the frequency distribution of households across income levels in different social groups to assess the degree of non-overlap between them (which is termed sequential inequality by Jayadev and Reddy 2011).

We then estimate a standard GE (2) inequality index (or half of the squared coefficient of variation) along with its decomposition by caste.

In most studies attempting a decomposition of inequality by subgroup, it has been found that the between-group component is small and does not exceed 15 per cent of overall inequality (Kanbur 2006). Elbers, Lanjouw, Mistiaen, and Ozler (ELMO 2008) point out that the value of the between-group component is affected by the number of subgroups, their relative sizes, and the difference in means across subgroups. They argue that the existing measure compares observed between-group inequality with an extreme benchmark, namely the inequality that would occur if each individual constituted a separate group. They suggest an alternative benchmark termed maximum between-group inequality, which occurs in a situation “where subgroup incomes occupy non-overlapping intervals.”⁷ We have computed this alternative benchmark, as proposed in ELMO (2008).

The estimates of income here include all incomes in cash and kind; they account for all cash and kind receipts other than from borrowing and from sale of assets (including cash transfers). All incomes are net of costs incurred by the households in the process of production and income generation. Our calculation is based on the understanding that the majority of rural households are self-employed in crop production, in other non-agricultural occupations, or engaged in wage employment on informal contracts and unable to report their total household income as such. Income is thus a derived variable, derived on the basis of a detailed accounting of outputs and costs of all economic activities. The derivation is complex, given that markets are thin or even absent for many outputs and inputs. We also argue that a household has to be considered as the basic unit for estimation of incomes even though this poses multiple challenges. These include accurate estimation of remittances of household members who are not regularly resident, and apportioning incomes in the case of joint cultivation (by brothers, say, residing in two separate households). The surveys used a comprehensive definition of incomes, and the questionnaire included detailed modules on incomes from crop cultivation, from animal husbandry, and from wage labour, as well as from salaried employment, non-agricultural self-employment, rent, and other transfers. A total of 20 sources of income were used to construct the final income variable.

⁷ If $\{y\}$ is an income distribution for which inequality between subgroups g and h is maximised, then, either all incomes in g are higher than all incomes in h , or vice versa (ELMO 2008, p. 236). To illustrate, if there is a village of 100 persons with two groups (Dalits and Others), and if group 1, Dalits, comprises 25 persons, then, between-group inequality would be “maximum” if the lowest-ranked 25 persons are all Dalits.

For most of this paper, we have focused on two social groups: Scheduled Castes or Dalits (combined with Scheduled Tribes in the case of one village, Ananthavaram), and “Other Social Groups” or all non-Scheduled Caste, non-Scheduled Tribe, and non-Muslim households. There are only a few Muslim households in our survey villages, but as they are also relatively deprived, we have excluded them from the analysis. As the data come from two agricultural years, 2005–06 (five villages) and 2006–07 (three villages), we have reported all incomes at constant (2005–06) prices.⁸

Before proceeding to the results, we emphasise that we see each village as a case study, and that our attempt is to explore and explain income inequality across castes in each village, and not to draw conclusions about the districts or States to which these villages belong. While the data for all villages are reported, for convenience, in a table, each village must be read separately. At the same time, since these villages are drawn from different agro-economic zones, we can draw some contrasts between patterns of inequality in a village in a certain type of region with that in another type of region. The paper attempts to describe and comment on patterns of inequality across the big caste divide – Dalit versus Other Social Groups – in each of the eight villages.

PATTERNS OF INEQUALITY

Before turning our attention to the role of caste in income inequality, we briefly report some of the features of aggregate income inequality in the eight survey villages (see Swaminathan and Rawal 2011 for further details).

First, while income inequality was high in general, there were important differences across villages (Table 3). The lowest estimated Gini coefficient was 0.491, for Nimshirgaon (western Maharashtra), and the highest was 0.686, for 25 F Gulabewala (western Rajasthan) – a difference of 19.5 Gini points. The three villages with the highest Gini coefficients (above 0.6) were Ananthavaram in coastal Andhra Pradesh, Harevli in western Uttar Pradesh, and 25 F Gulabewala in north-west Rajasthan. All three are canal-irrigated villages.

Secondly, there was extreme concentration of income at the top. The income share of the top 10 per cent was highest in 25 F Gulabewala (53.93), followed by Ananthavaram (49.7) and Harevli (48.58). As mentioned above, these three villages are characterised by relatively high-yielding canal-irrigated agriculture.

The top decile had the lowest income shares in Nimshirgaon (37.5) and Bukkacherla (39.95). Bukkacherla is a rainfed village with unirrigated crop cultivation and a predominance of small-holder cultivation (and could be referred to as a “dry village”). The fact that Nimshirgaon did not have the same degree of income concentration as the other three villages, which are characterized by relatively advanced agriculture,

⁸ We use the State-level Consumer Price Index for Agricultural Labour (CPIAL) as the deflator.

Table 3 *Gini coefficients of household and per capita income, study villages*

Village	State	Gini coefficient	
		Households	Persons
Ananthavaram	Andhra Pradesh	0.656	0.602
Bukkacherla	Andhra Pradesh	0.607	0.542
Kothapalle	Andhra Pradesh	0.577	0.565
Harevli	Uttar Pradesh	0.671	0.602
Mahatwar	Uttar Pradesh	0.555	0.509
Warwat Khanderao	Maharashtra	0.586	0.531
Nimshirgaon	Maharashtra	0.549	0.491
25 F Gulabewala	Rajasathan	0.740	0.686

Note: These are Gini coefficients adjusted for negative incomes, following Chen, Tsaur, and Rhai (1982).
Source: Swaminathan and Rawal (2011).

may be because it is located close to urban and semi-urban areas that provide opportunities for non-agricultural employment.

Thirdly, income inequality appears to be of the Latin American “winner takes all” model (Palma 2006), that is, extreme concentration in the 10th decile, with even the 9th decile not gaining a significant share of the income. The share of the 9th decile is barely above 10 per cent in the survey villages (for example, 12 per cent in Kothapalle and 15 per cent in Mahatwar). In all the villages, there is a clear divide between deciles 10 and 9 in the level and share of income.

Thus there appears to be a very small “middle class” in village India. In all eight villages, households in the middle deciles, say, decile 5 to 7, did not receive an income share corresponding to their population share.

We now turn to differences in incomes across caste groups.

Absolute Disadvantage

Estimates of mean per capita income for Scheduled Caste or Dalit households and households from Other Social Groups establish that Dalit households are at a disadvantage in terms of income in each of the eight villages (Table 4).

The distance between the mean incomes of Dalit households and households of Other Social Groups varied across villages: it was lowest in Kothapalle village of Andhra Pradesh (mean incomes of Dalit households were 67 per cent of mean incomes of Other Social Group households) and highest in 25 F Gulabewala village of Rajasthan.

The two Dalit-majority villages were strikingly different. In the eastern Uttar Pradesh village of Mahatwar, on average, a Dalit household received 47 per cent of the income

Table 4 Mean household income by social group, study villages in Rs per annum at 2005–06 prices

Village (State)	Year of survey	1	2	Col. 1 / Col. 2
		Dalit	Other Social Group	Ratio of Dalit to Other Social Group
Ananthavaram (AP)	2005–06	30,690	93,727	33
Bukkacherla (AP)	2005–06	19,829	40,596	49
Kothapalle (AP)	2005–06	26,197	38,962	67
Harevli (UP)	2005–06	27,540	118,951	23
Mahatwar (UP)	2005–06	25,077	53,530	47
Warwat Khanderao (MAH)	2006–07	24,843	68,400	36
Nimshirgaon (MAH)	2006–07	41,647	87,393	48
25 F Gulabewala (RAJ)	2006–07	25,111	339,078	7

Notes: Figures for villages surveyed in 2006–07 were deflated to 2005–06 prices using State-level CPIAL.

Other Social Group includes all non-Dalit, non-Scheduled Tribe, and non-Muslim households.

AP = Andhra Pradesh; UP = Uttar Pradesh; MAH = Maharashtra; RAJ = Rajasthan.

Source: Survey data.

of a non-Dalit (Other Social Group) household. By contrast, in Gulabewala village, a Dalit household received only 7 per cent of the average income of a non-Dalit (in this case Jat Sikh) household.

When income distribution is highly unequal, we know that mean incomes will be affected by extreme values. We have therefore shown the value of median annual household income for the two social groups in Table 5.

Table 5 Median household incomes by social group, study villages in Rs per annum at 2005–06 prices

Villages (State)	Year of survey	1	2	Col. 1 / Col. 2
		Dalit	Other Social Group	Ratio of Dalit to Other Social Group
Ananthavaram (AP)	2005–06	18,008	34,800	52
Bukkacherla (AP)	2005–06	18,545	19,584	95
Kothapalle (AP)	2005–06	17,608	25,219	70
Harevli (UP)	2005–06	19,223	53,432	36
Mahatwar (UP)	2005–06	19,834	22,882	87
Warwat Khanderao (MAH)	2006–07	15,140	34,479	44
Nimshirgaon (MAH)	2006–07	30,998	47,014	66
25 F Gulabewala (RAJ)	2006–07	19,941	180,785	11

Notes: Figures for villages surveyed in 2006–07 were deflated to 2005–06 prices using State-level CPIAL.

Other households include all non-Dalit, non-Scheduled Tribe, and non-Muslim households.

AP = Andhra Pradesh; UP = Uttar Pradesh; MAH = Maharashtra; RAJ = Rajasthan.

Source: Survey data.

Table 6 *Proportion of households that own agricultural land and average value of agricultural land owned, Dalit and Other Social Group households, study villages*

Village	Proportion of households that own agricultural land		Average value of agricultural land owned per household	
	Dalit	Other Social Group	Dalit	Other Social group
Ananthavaram	24	58	83,234	1,220,425
Bukkacherla	88	90	29,502	235,441
Kothapalle	58	59	67,149	377,275
Harevli	55	68	162,625	341,794
Mahatwar	73	92	88,135	364,869
Warwat Khanderao	58	78	96,828	477,899
Nimshirgaon	56	85	624,172	1,202,394
25 F Gulabewala	3	85	156,773	5,663,971

Note: Other Social Group includes all non-Dalit, non-Scheduled Tribe, and non-Muslim households.

Source: Survey data.

As expected, median incomes were lower than mean incomes in all eight villages for both social groups. Further, in each village, the income of the median Dalit household was lower than the income of the median Other Social Group household. The gap between Dalits and Other Social Group households, however, was lower in terms of median incomes than it is in terms of mean incomes. The gap was relatively narrow in Bukkacherla, indicating that incomes were low for a substantial number of non-Dalit households in this village.⁹

Income disparities across caste groups were clearly related to disparities in ownership of means of production. Table 6 shows the proportion of Dalit and Other Social Group households that owned land, and the average value of land owned by households belonging to these caste groups. The table shows that in all the villages, the proportion of households that owned land and the average value of land owned were substantially lower for Dalit households than for Other Social Group households. Further, it can be seen from the table that villages with high income disparities across castes, for example 25 F Gulabewala in Sri Ganganagar district, were villages with very high disparities in ownership of land across castes.

Representational Inequality

We now turn to the first of our distributional measures of inter-group inequality. In Tables 7, 8, and 9, we show the distribution of households from Dalit and Other Social Groups across income quintiles. Equal representation would imply that each quintile has the same proportion of Dalit households as the population proportion (as

⁹ Note that Dalits account for less than 20 per cent of all village households in Bukkacherla.

Table 7 Proportion of households belonging to different social groups in each quantile of per capita income, Andhra Pradesh villages

Quantiles of per capita income	Ananthavaram			Bukkacherla			Kothapalle			
	Dalit	Adivasi	Other Social Group	Dalit	Muslim	Other Social Group	Dalit	Adivasi	Muslim	Other Social Group
1	45	15	33	16	0	84	43	5	5	46
2	64	0	30	25	0	75	39	0	0	61
3	30	12	52	35	0	65	37	0	0	63
4	54	3	43	16	5	79	11	0	0	89
5	23	0	77	5	5	90	37	0	0	63
All	43	6	47	19	2	79	33	1	1	65

Note: Other Social Group includes all non-Dalit, non-Scheduled Tribe, and non-Muslim households.

Source: Survey data.

Table 8 Proportion of households belonging to different social groups in each quantile of per capita income, Uttar Pradesh villages

Quantiles of per capita income	Harevli			Mahatwar	
	Dalit	Muslim	Other Social Group	Dalit	Other Social Group
1	62	10	29	67	33
2	55	14	32	52	48
3	36	18	45	73	27
4	27	9	64	61	39
5	5	9	86	52	48
All	37	12.5	50.5	59	41

Note: Other Social Group includes all non-Dalit, non-Scheduled Tribe, and non-Muslim households.
Source: Survey data.

shown in the last row). The tables have to be read as follows. In Table 8, for example, the first row shows that in Harevli, of all households in the first income quintile, 62 per cent were Dalit households, 10 per cent were Muslim households, and the remaining 29 per cent belonged to Other Social Groups. (The rows add up to 100 for each village.) The fifth row shows that Dalit households constituted only 5 per cent of the top income quintile although they constituted 37 per cent of all households (last row).

With only one exception, in every village, Dalit households were under-represented in the top income quintile (Q5). In three villages (Bukkacherla, Harevli, and Warwat Khanderao), Dalits comprised at most 5 per cent of the top quintile. There were no Dalits at all in the top income quintile in 25 F Gulabewala village. In Kothapalle, the sole exception, Dalit households comprised 33 per cent of the population and 37 per cent of Q5, but even here the picture changes if we take the top 5 per cent

Table 9 Proportion of households belonging to different social groups in each quantile of per capita income, Maharashtra and Rajasthan villages

Quantiles of per capita income	Warwat Khanderao			Nimshiragon			25 F Gulabewala	
	Dalit	Muslim	Other Social Group	Dalit	Muslim	Other Social Group	Dalit	Other Social Group
1	22	20	58	53	6	41	100	0
2	16	22	62	33	10	57	95	5
3	6	30	64	40	13	47	83	17
4	2	22	76	25	1	74	24	76
5	4	12	84	13	0	87	0	100
All	10	21	69	33	6	61	60	40

Note: Other Social Group includes all non-Dalit, non-Scheduled Tribe, and non-Muslim households.
Source: Survey data.

Table 10 *Distribution of households by per capita income and social group, Andhra Pradesh villages, 2005–06*

Per capita income category (Rs per annum)	Ananthavaram		Bukkacherla		Kothapalle	
	Dalit	Other Social Group	Dalit	Other Social Group	Dalit	Other Social Group
Less than 5500	39.5	26.3	63.2	46.6	61.4	37.2
5500–10000	26.1	14.6	21.1	22	16.2	38.6
10000–20000	23.6	29.3	15.8	18.1	12.7	16.5
20000–30000	10.8	11.8	0	6.5	9.7	4.9
30000–40000	0	4.4	0	3.9	0	0
40000–50000	0	2.2	0	2.6	0	0
>50000	0	11.5	0	0.4	0	2.8
All households	100	100	100	100	100	100

Notes: Households are ranked by per capita annual household income at constant prices. The first income category corresponds roughly to the official poverty line.

Other Social Group includes all non-Dalit, non-Scheduled Tribe, and non-Muslim households.

Source: Survey data.

(see Table 10). At the same time, Other Social Group households were over-represented in Q5. In five villages, more than 84 per cent of households in Q5 belonged to Other Social Groups.

Sequential Inequality

We have observed that representation across quintiles (and other income groupings like deciles) showed Dalit households to be substantially worse off than Other Social Group households. To assess the extent to which Dalit households are over-represented among the income-poor, we looked at the frequency distribution of per capita income for the two groups separately (Tables 10, 11, 12, and 13). Table 10 shows the distribution of Dalit and Other Social Group households across different per capita income categories in the three villages of Andhra Pradesh. The corresponding data for the other villages are in Tables 11 to 13.

The data in these tables again underline the fact that the incomes of Dalits and Other Social Groups diverged significantly. For example, while there was no Dalit household in any of the eight villages with a per capita income over Rs 40,000 a year, in Harevli, Ananthavaram and Gulabewala villages, more than 5 per cent of other households reported an annual per capita income of over one lakh rupees.

The extent to which the frequency distributions are non-overlapping is a measure of the degree of sequential inequality or clustering. There was some overlap at lower incomes in all the villages, indicating that there were low-income households among Other Social Groups as well, although the lowest income category (less than

Table 11 *Distribution of households by annual per capita income and social group, Harevli and Mahatwar, 2005–06*

Per capita income category (Rs per annum)	Harevli		Mahatwar	
	Dalit	Other Social Group	Dalit	Other Social Group
Less than 5500	80.0	37.7	79.8	72.6
5500–10000	12.5	26.1	13.8	11.3
10000–20000	7.5	11.6	4.3	11.3
20000–30000	0	10.1	2.1	0
30000–40000	0	4.3	0	1.6
40000–50000	0	0	0	3.2
>50000	0	10.1	0	0
All households	100	100	100	100

Notes: Households are ranked by per capita annual household income at constant prices. The first income category corresponds roughly to the official poverty line.

Other Social Group includes all non-Dalit, non-Scheduled Tribe, and non-Muslim households.

Source: Survey data.

Rs 5,500 per annum) inevitably had a higher proportion of Dalit households than Other Social Group households. However, there was a discernible non-overlapping section in every village at the upper end of the income distribution. In other words, the ceiling for incomes among Dalit households was well below the maximum per capita income in each village. The non-overlapping section was largest in 25 F Gulabewala village: here, 68 per cent of households from Other Social Groups reported a per capita income above Rs 20,000, whereas no Dalit household reported an income above Rs 20,000.

Table 12 *Distribution of households by annual per capita income and social group, Nimshirgaon and Warwat Khanderao, 2006–07*

Per capita income category (Rs per annum)	Warwat Khanderao		Nimshirgaon	
	Dalit	Other Social Group	Dalit	Other Social Group
Less than 5500	64.0	35.5	49.4	20.5
5500–10000	20.0	25.6	27.3	28.2
10000–20000	12.0	24.4	16.1	31.4
20000–30000	0.0	11	1.2	12.1
30000–40000	4.0	2.3	5.9	0
40000–50000	0.0	0.6	0	3.1
>50000	0.0	0.6	0	4.7
All households	100.0	100	100	100

Notes: Households are ranked by per capita annual household income at constant prices. The first income category corresponds roughly to the official poverty line.

Other households include all non-Dalit, non-Scheduled Tribe, and non-Muslim households.

Source: Survey data.

Table 13 *Distribution of households by annual per capita income and social group, 25 F Gulabewala, 2006–07*

Per capita income category (Rs per annum)	25 F Gulabewala	
	Dalit	Other Social Group
Less than 5500	63.4	3.7
5500–10000	28.5	6.2
10000–20000	8.1	22.2
20000–30000	0	16
30000–40000	0	9.9
40000–50000	0	11.1
>50000	0	30.9
All households	100	100

Notes: Households are ranked by per capita annual household income at constant prices. The first income category corresponds roughly to the official poverty line.

Other Social Group includes all non-Dalit, non-Scheduled Tribe, and non-Muslim households.

Source: Survey data.

The graphic representation of the frequency distribution of per capita incomes (using kernel density plots) of Dalits and others in Figures A1 to A8 makes the inter-group differences in income distribution very obvious. The kernel density plots of per capita income of Dalit and Other Social Group households show the most overlap in Kothapalle and the least overlap in 25 F Gulabewala.

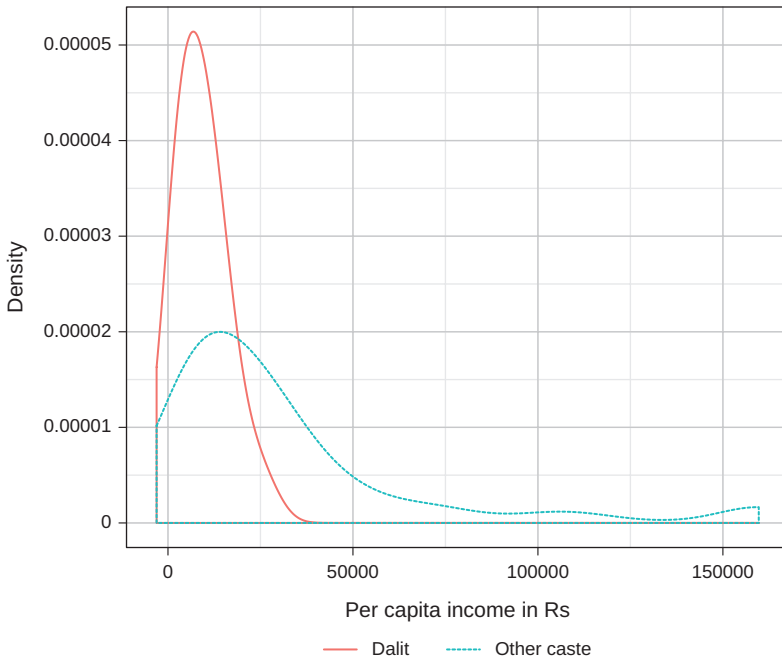


Figure A1 *Kernel density plots of per capita incomes for persons belonging to Dalit and other households, Ananthavaram, Andhra Pradesh*

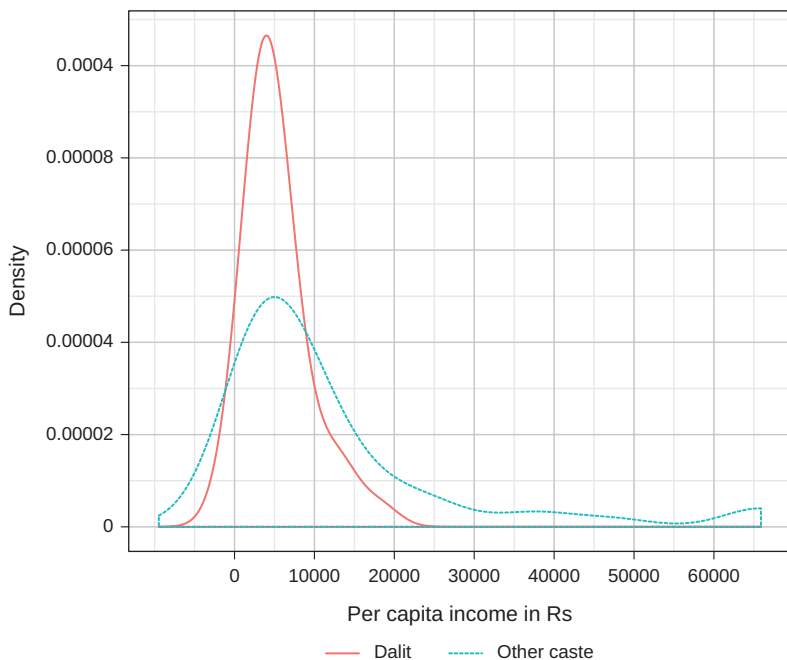


Figure A2 Kernel density plots of per capita incomes for persons belonging to Dalit and other households, Bukkacherla, Andhra Pradesh

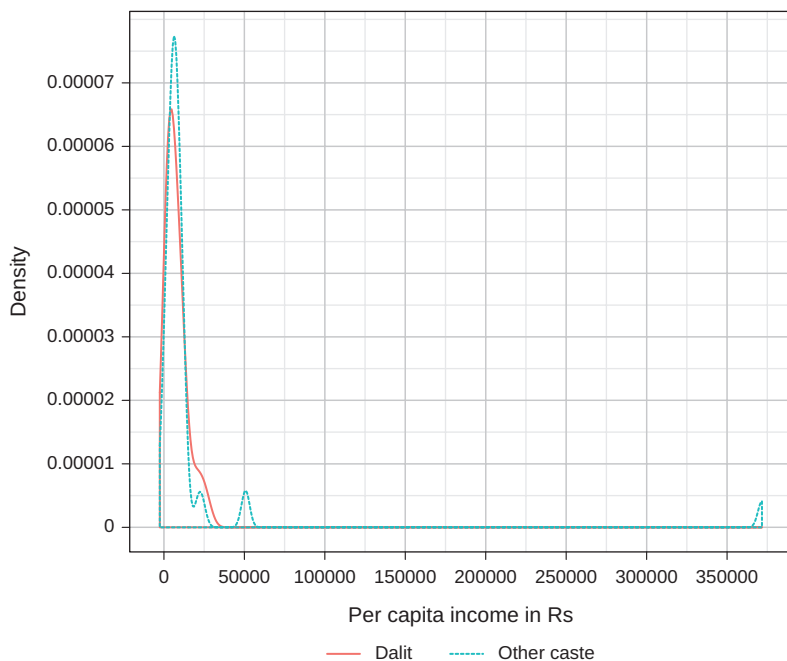


Figure A3 Kernel density plots of per capita incomes for persons belonging to Dalit and other households, Kothapalle, Andhra Pradesh

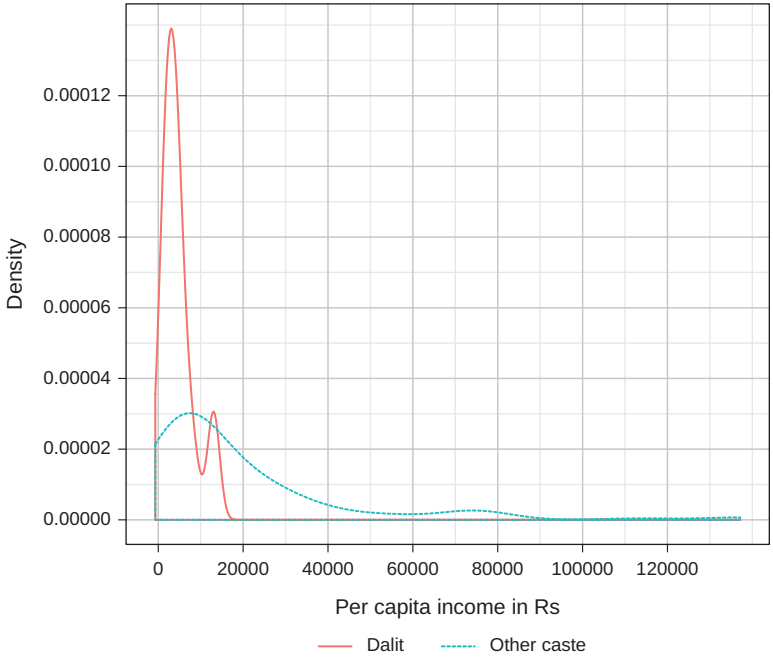


Figure A4 Kernel density plots of per capita incomes for persons belonging to Dalit and other households, Harevli, Uttar Pradesh

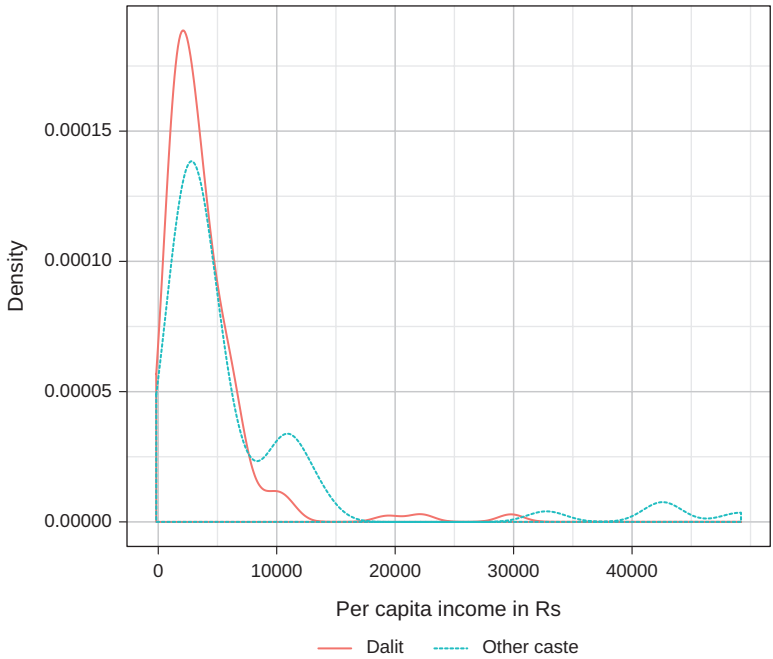


Figure A5 Kernel density plots of per capita incomes for persons belonging to Dalit and other households, Mahatwar, Uttar Pradesh

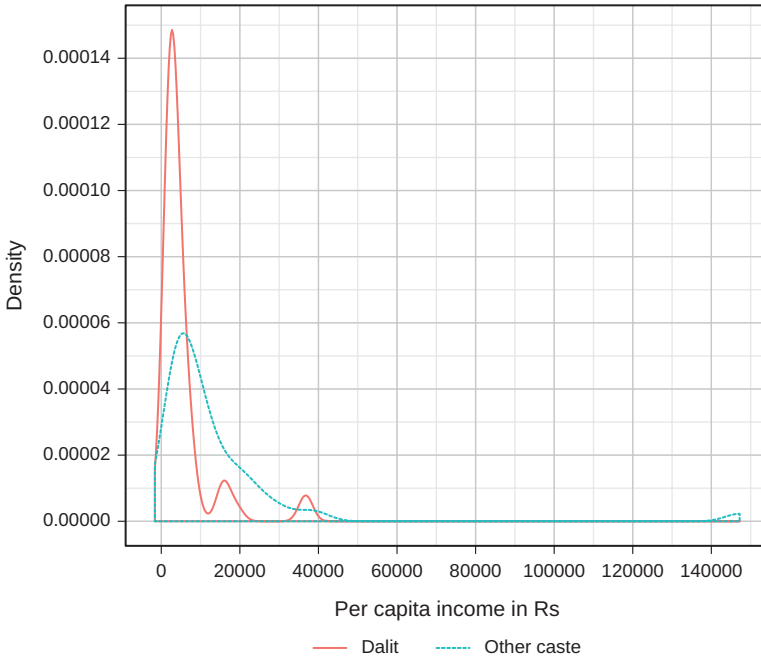


Figure A6 Kernel density plots of per capita incomes for persons belonging to Dalit and other households, Warwat Khanderao, Maharashtra

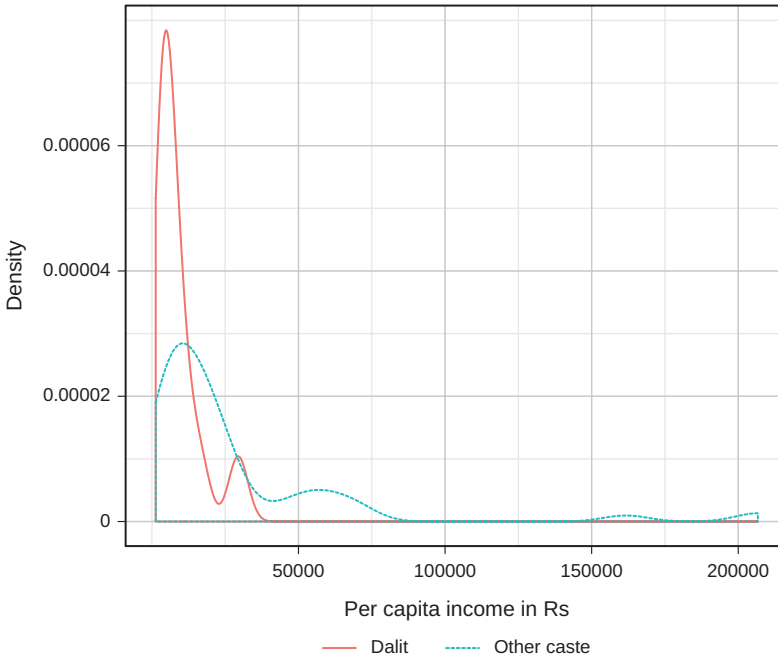


Figure A7 Kernel density plots of per capita incomes for persons belonging to Dalit and other households, Nimshirgaon, Maharashtra

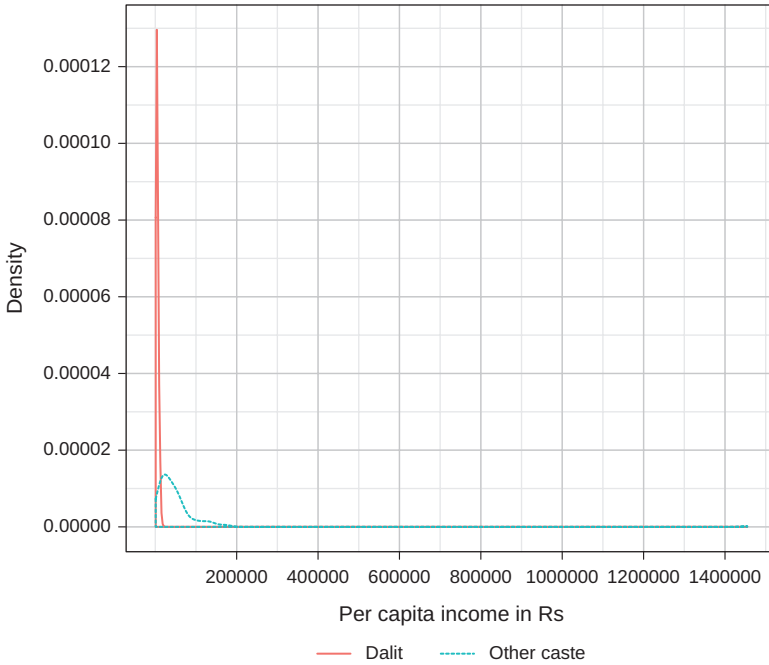


Figure A8 Kernel density plots of per capita incomes for persons belonging to Dalit and other households, 25 F Gulabewala, Rajasthan

Between-Group Inequality

To identify the role of inter-group inequality in observed total inequality, we attempted a standard decomposition of inequality by population subgroup, using the generalized entropy measure $GE(\alpha)$ with $\alpha=2$, which corresponds to half of the squared coefficient of variation (Litchfield 1999). With this measure, total observed inequality can be decomposed into a sum of within-group (I_w) and between-group inequality (I_b) components.

$$I = I_w + I_b$$

The within-group inequality measure is the weighted sum of inequality of income within each subgroup, the weights being the relative population shares and income shares. The between-group inequality measure is calculated by assigning the mean income of each subgroup to all members of that subgroup and then computing a measure of inequality (*ibid.*). We have followed this decomposition method to calculate between-group and within-group inequality for each village. We have also calculated maximum between-group inequality as recommended by ELMO (2008) and identified observed between-group inequality as a share of the estimated maximum value.

For the decomposition exercise, we have used social (caste-cum-religion) groups specific to each village. The results are reported in Tables 14, 15, and 16.

Table 14 *Estimates of inequality decomposition (within-group and between-group components of inequality) by caste group using GE(2) measure of inequality, Andhra Pradesh villages*

	Ananthavaram	Bukkacherla	Kothapalle
Dalit	0.0539	0.0186	0.1096
Scheduled Tribe	0.0009	--	0.0000
Muslim	0.0008	0.0005	0.0000
OBC	0.0376	0.0981	0.0616
Other Caste Hindu	2.4478	1.6676	7.7464
(a) Total within-group inequality	2.5412	1.7847	7.9176
(b) Between-group inequality	0.3177	0.0606	0.1456
Total inequality (a+b)	2.8589	1.8453	8.0632
Maximum between-group inequality (ELMO)	0.5918	0.3579	0.4836
Between-group inequality as a percentage of maximum between-group inequality	53.7	16.9	30.1
Between-group inequality as a percentage of total inequality	11.1	3.3	1.8

For Ananthavaram village (Guntur district, Andhra Pradesh), we used five subgroups: Scheduled Castes or Dalits, Scheduled Tribes, Muslims, Other Backward Classes (OBC), and Other Caste Hindus. The decomposition exercise shows that within-group inequality was least among Scheduled Tribe and Muslim households (only a few of the latter were present), followed by OBC and Dalit households. Not surprisingly, within-group inequality was highest among Other Caste Hindu households. Turning to the between-group component, it amounted to 11 per cent of total inequality in the village. However, using the ELMO

Table 15 *Estimates of inequality decomposition (within-group and between-group components of inequality) by caste group using GE(2) measure of inequality, Uttar Pradesh villages*

	Harevli	Mahatwar
Dalit	0.0808	0.1148
Muslim	0.0084	
OBC	0.1752	0.9282
Other Caste Hindu	1.7383	0.4077
(a) Total within-group inequality	2.0026	1.4507
(b) Between-group inequality	0.3169	0.2612
Total inequality (a+b)	2.3195	1.7119
Maximum between-group inequality (ELMO)	0.6337	0.9163
Between-group inequality as a percentage of ELMO		
between-group inequality	50.0	28.5
Between-group inequality as a percentage of total inequality	13.7	15.3

Table 16 *Estimates of inequality decomposition (within-group and between-group components of inequality) by caste group using GE(2) measure of inequality, Maharashtra and Rajasthan villages*

	Warwat Khanderao	Nimshirgaon	25 F Gulabewala
Dalit	0.0125	0.0913	0.0049
Muslim	0.0764	0.0009	–
Nomadic Tribe	0.0507	0.0118	–
OBC	4.2799	0.0036	4.2271
Jain	–	1.1672	–
Other Caste Hindu	–	0.2907	0.0049
(a) Total within-group inequality	4.4195	1.5654	4.2370
(b) Between-group inequality	0.0648	0.0986	0.5361
Total inequality (a+b)	4.4843	1.6640	4.7730
Maximum between-group inequality (ELMO)	0.2700	0.3763	0.5815
Between-group inequality as a percentage of ELMO			
between-group inequality	24.0	26.2	92.2
Between-group inequality as a percentage of total inequality	1.4	5.9	11.2

approach, within-group inequality was 53.7 per cent of maximum between-group inequality.

In both Bukkacherla and Kothapalle villages, within-group inequality was highest for Other Caste Hindus. In Kothapalle, between-group inequality accounted for less than 2 per cent of inequality using the conventional approach, but accounted for as much as 30 per cent of maximum between-group inequality.

In Mahatwar village of Uttar Pradesh, within-group inequality was higher among OBC households than Other Caste Hindu (few in number) and Scheduled Caste households. In Harevli, within-group inequality was very low among Muslims, followed by Dalits, and was highest among Other Caste Hindus.

By contrast, between-group inequality was as high as 92 per cent of the maximum value in 25 F Gulabewala village in Rajasthan. As discussed earlier, the income distribution of Dalit households and others (mainly Jat Sikhs, classified as OBCs) in this village had a large non-overlapping section. While within-group inequality among OBCs was undoubtedly the biggest contributor to aggregate income inequality here, the ELMO criterion nevertheless indicates that between-group inequality should be a matter of serious concern. There was both high income inequality and close overlap between social and economic status in this village: the Dalit households were landless and survived on low incomes from agricultural labour, whereas the

OBC (Jat Sikh) households were cultivators with sizeable land-holdings and high incomes.

Nimshirgaon village in Maharashtra had the highest number of subgroups (Dalits, Muslims, Nomadic tribes, OBCs, Jains, and Other Caste Hindus), with within-group inequality being highest among Jain households, followed by Other Caste Hindus. In Warwat Khanderao, the biggest contribution to aggregate inequality was made by within-group inequality among OBCs. In both Warwat Khanderao and Nimshirgaon, the between-group component was around a quarter of the maximum value.

CONCLUDING REMARKS

The literature on household income inequality in India is thin, as there are very few household income surveys. An earlier study by us of income inequality across households in eight villages in India showed extremely high levels of inequality, with the Gini coefficient for per capita income ranging from 0.491 in Nimshirgaon village in Maharashtra to 0.686 in 25 F Gulabewala village in Rajasthan. There is also no dearth of evidence on the persistence of caste discrimination in rural India. In this context, in this paper, we have used data on household incomes from a set of eight village studies to examine the nature of between-group income inequality, focusing on differences between Scheduled Caste or Dalit households and Other Social Groups.

The analysis shows that Dalit households were under-represented in the top income quintile in all villages but one, and over-represented in the lower quintiles. The frequency distribution of incomes for Dalits versus Other Social Groups revealed distinct non-overlapping segments. Thirdly, the contribution of between-group inequality to total inequality ranged from 1 to 14 per cent using the conventional decomposition of GE(2). However, using the ELMO method, between-group inequality was more than 50 per cent of its maximum value in three villages.

While the story of each village is different, there are two general observations we wish to make. First, the three villages with the highest levels of aggregate income inequality – Harveli in western Uttar Pradesh, Ananthavaram in coastal Andhra Pradesh, and 25 F Gulabewala in western Rajasthan – were also the villages with the highest contribution of between-group inequality; and all three villages are canal-irrigated villages of relatively high agricultural productivity. In other words, the more prosperous agricultural villages were characterised by high income inequality as well as marked caste segregation.

Secondly, the size of the Dalit population in a village (or population dominance) does not show any simple relation with the degree of inter-group inequality. Of the two Dalit-majority villages, one, 25 F Gulabewala, showed the highest between-group

inequality (using the ELMO approach) and another, Mahatwar, showed relatively low between-group inequality.

Our research suggests that not only is income inequality very high in village India, but also that caste still matters. We need further research on the specific ways in which caste discrimination affects income generation in contemporary rural India.

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