Income Inequality and Polarization in India: The Role of Caste

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"We must begin by acknowledging the fact that there is complete absence of two things in Indian Society. One of these is equality. On the social plane, we have in India a society based on the principle of graded inequality which we have a society in which there are some who have immense wealth as against many who live in abject poverty. On the 26th of January 1950, we are going to enter into a life of contradictions. In politics we will have equality and in social and economic life we will have inequality. In politics we will be recognizing the principle of one man one vote and one vote one value. In our social and economic life, we shall, by reason of our social and economic structure, continue to deny the principle of one man one value. How long shall we continue to live this life of contradictions? How long shall we continue to deny equality in our social and economic life? If we continue to deny it for long, we will do so only by putting our political democracy in peril."

(Excerpts from Ambedkar's last address to India's Constituent Assembly on November 15, 1949)[i]

1 Introduction

The story of rising inequality has captured global attention in recent times. Renewed interest in inequality has produced highly influential work on this topic recently (Piketty, 2014) (Milanovic, 2016). While one strand of work in this area is focused on inter-personal inequalities, another has studied the disparities and differences in well-being across population sub-groups or horizontal inequalities (Stewart, Horizontal Inequalities and Conflict, 2008). Stewart (2002) stressed on the need to study the economic, social and political status of socially constructed groups and rectify horizontal inequalities through state action; they can otherwise lead to conflict and create political instability.

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Historically, caste has been an important factor in explaining disparities in social and economic well-being in India. Sub-groups of the population formed on the basis of gender, race, caste, religion and ethnicity have been studied using concepts like horizontal inequality and polarization. In an important contribution, Jayadev and Reddy (2011) presented concepts that can be used to study between-group inequality while Subramanian (2011) reviewed the measurement issues.

There have been studies on the caste-based disparities in consumption, income, wealth, poverty outcomes and opportunities, (Zacharias & Vakulabharanam, 2011) (Thorat A. , 2010) (Thorat & Dubey, 2012) (Desai & Dubey, 2011). Scholars have also studied market and non-market forms of discrimination and wage/income differentials explained by caste, and its role in shaping inequality outcomes (Borooah, 2005) (Kijima, 2006) (Deshpande, 2000). We intend to add to the literature and explore the role of caste in explaining inequality outcomes. Given the unprecedented growth of the Indian economy in recent times, we examine whether the growth process has been inequality-inducing, or whether it has helped to bridge the gap between the historically marginalized and the better-endowed.

2 Data and Methodology

We study inequality and polarization in various economic distributions – wealth, consumption expenditure and income. For the first two, we use nationally-representative household surveys conducted by the National Sample Survey Organisation. The All-India Debt and Investment Surveys (AIDIS) were conducted in three rounds in 1991 (48th round), 2002 (59th round) and 2012 (70th round). We use these to study the trends in the ownership of assets over time. The Consumer Expenditure Surveys (CES) collect information on the household expenditure on various items. These surveys are usually conducted on a quinquennial basis; we use the rounds conducted in 1993-94 (50th round), 2004-05 (61st round) and 2011-12 (68th round). It is generally accepted that the NSS sample surveys do not adequately represent the poorest of the poor or the super-wealthy. The problem becomes more acute in computing wealth inequality as the AIDIS undermines financial assets and corporate wealth. For this reason, we believe that the inequality estimates using the NSS surveys are likely to be underestimates.

To study income distribution, we used the India Human Development Survey (IHDS) datasets. This is a nationally-representative panel survey which collected data in two rounds. IHDS-I surveyed 41,554 households in 2004-05; IHDS-II re-interviewed these households in 2011-12. However, due to the relatively smaller size of this dataset as compared to the NSS surveys, we do not rely on it for more detailed exercises.

NSS surveys categorise households into Scheduled Tribes (ST), Scheduled Castes (SC), Other Backward Classes (OBCs) and Others, a residual category which consists of upper caste households. The focus of this paper is on the Scheduled Castes (SCs) who were for centuries treated as untouchables and were denied opportunities, blocked from participating in the labour market (except for certain demeaning occupations like manual scavenging) as well as barred from owning assets. Given our focus, we use three categories for this paper: Scheduled Castes, non-SC-ST (OBC-GEN) and Scheduled Tribes.

We begin by constructing indicators of inequality such as the Gini index and the shares of the top and bottom quantiles. This gives a general picture of the changes in inequality between the early 1990s and 2012. After showing the general trends, we decompose these trends by social group. We have also studied disaggregated trends by social group at various levels – by state and by sector.

Thereafter, we constructed bipolarization and socioeconomic polarization indices. We have used the Foster-Wolfson index to measure bipolarization. For socioeconomic poalrization, we have used the Esteban-Gradín-Ray index which conceptalised polarization as the interaction between identification and alienation. We also used the Zhang-Kanbur index (2001), which takes the ratio of the between-group and within-group components of inequality as the measure of polarization. We then put together the trends in inequality and polarization.

3 Inequality

3.1 Gini coefficients

We begin by looking at the broad trends in inequality by wealth, income and consumption expenditure through the Gini coefficients (Table 1). Of the three, wealth is the most unequally distributed. The inequality in the ownership of total assets rose

in the 1990s, and even more sharply in the 2000s. In all three survey rounds, wealth inequality was much higher in urban than in rural areas. As we have shown in an earlier paper (Anand & Thampi, 2016), the main asset groups driving the rise in inequality were land and buildings.

Place Table 1 here.

Consumption expenditure has also become more unequal since the 1990s. Unlike wealth, consumption expenditure inequality increased more sharply between 1993-94 and 2004-05; this includes the early years of the high growth period between 2003 and 2008. Consumption expenditure may be expected to react more quickly to a change in fortunes than ownership of assets. Consumption expenditure inequality increased in both rural and urban areas; the trends in overall inequality closely follow the sharp rise in urban areas in the first decade.

The levels of income inequality lie in between the levels in wealth and consumption expenditure. Although the overall Gini coefficient appears to have remained the same, this masks the increase in both rural and urban income inequality. As these surveys were conducted only in 2004-05 and 2011-12, the trends in income inequality cannot be studied over a longer time period. In this decade, inequality in income seems to be similar in trend to consumption expenditure.

Place Table 2 here.

It is not only the rise in inequality, but also the concentration of income/wealth at the top end of the distribution that has been noted worldwide. Data from consumption and household wealth surveys unambiguously establish the 'winner takes all' phenomenon in India, where only the top 10 percent of the population is increasing their consumption/wealth shares (Table 2). The bottom 90 percent has suffered a decline in their consumption/wealth shares during the study period, worsening the already skewed distribution. In later sections, we study the composition of the top 10 percent to ascertain whether the gains from growth has benefitted all social groups equally.

3.2 Social groups

3.2.1 Social group composition of Quantiles

The previous section establishes the rise in inequality by different dimensions since the 1990s. Our focus in this paper is to understand the role of caste or social groups in explaining how these inequalities have persisted and intensified. Figures 1-6 are a clear affirmation of the economic disadvantages that historically marginalised social groups continue to face. These figures show the composition of social groups in the top 1%, 5%, 10% and 50%, as contrasted with the bottom 50%. In an ideal world with no caste based inequality, the ratios of each social group in each quantile would be equal to one, implying that the share of the group in the quantile was equal to their overall population share.

In our caste-ridden society, the ratios of the SC and ST populations in the top 50% were much lower than 1 (Figure 1). Meanwhile, the ratio of the non-SC-ST population was higher than 1, implying that this group was disproportionately concentrated in the wealthier half of the population. These ratios have also remained more or less the same over time. This indicates very little mobility from the bottom to the top half of the population for the SC and ST populations. The composition of these groups in the wealth distribution below the median was around 1.4 times their overall population shares.

Place Figure 1 here.

Looking more closely at the social group composition of the topmost quantiles reiterates the point even more strongly (Figure 2). The non-SC-ST composition in the top 1, 5 and 10 percent of the wealth distribution was around 1.3 times their share in the total population. At the same time, the share of the SC population in the wealthiest 1% was only 10 percent of their overall population share; their share in the top 5% was 20 percent of their population share. Both these ratios remained unchanged over two decades. In the wealthiest decile, the composition of SCs was only 20 percent of their population share; it increased slightly to 30 percent by 2012. The ratios denoting the relative composition of the ST population in the top quantiles of the wealth distribution were similar, and remained more or less the same over time. The story is almost exactly the same in the distributions of consumption expenditure and income

(Figure 3-6), and we do not elaborate on them here. This reflects the disproportionate concentration of the forward caste groups in the topmost quantiles of all three distributions, at the expense of the historically disadvantaged groups.

Place Figures 2 – 6 here.

Place Table 3 here.

Table 3 gives the overall ratios of the shares in the three distributions relative to population shares. In the wealth distribution, the wealth shares of the SC and ST populations were only 40 percent of their population shares; the ratios have in fact declined since 1991. Meanwhile, the wealth share of the non-SC-ST group was around 1.2 times their population share. The 2002 and 2012 rounds give information on the OBC category as well. Separating this group from the forward castes shows that the concentration of wealth is even sharper than when the groups are combined. The OBCs are relatively more advantaged than the SC-ST populations but less so as compared to the forward caste groups. Of the four social groups, only the non-SC-ST-OBC group increased its ratio between 2002 and 2012; the rise was so sharp that the wealth share of this group was almost twice their population share in 2012.

The parallel trends in consumption expenditure and income were not as dismal as in the case of wealth but here too, the divide between the marginalised and forward caste groups is clearly visible. Only the forward caste group had wealth shares higher than their population shares in all rounds. For the ST category, the wealth share declined relative to their population share.

Place Figures 7-12 here.

We have also shown the kernel density estimates for consumption and wealth for SC, ST and non-SC-ST-OBC category for various rounds (Figure 7-12). The OBC-GEN category is the most right skewed of all sub-groups for both consumption and wealth data for all rounds. The difference is starker in household wealth than in consumption. The SC and ST categories are clustered at the left of the consumption and wealth distribution, indicating lower average levels of consumption and wealth for all the rounds.

3.2.2 Inequality and Decomposition

We have established the economic divide between the SC-ST groups and the rest of the population. It is also important to look deeper at the economic divide within these social groups and for this, we look at the Gini coefficients by group (Table 4). It is striking that the Gini coefficients for all three economic distributions have increased for all social groups since 1991.

Place Table 4 here.

In consumption expenditure and income, inequality seems to have increased at a similar pace for all groups. However, in the case of wealth, there is a sharp increase in the Gini coefficients of the ST category in both decades such that the overall increase in percentage point terms is the highest for this group, followed by the non-SC-ST category. This can be linked to the trend identified of the emergence of a "creamy layer" among members of the Scheduled Tribes (Zacharias & Vakulabharanam, 2011).

4 Polarization

Inequality measures capture deviations from the mean and thereby give a sense of the spread of the distribution, but they do not capture clustering in the distribution. This is where polarization measures are useful. These measures capture the extent of concentration of individuals or groups at certain poles in the distribution.

The distinction between polarization and inequality was conceptualised by Wolfson (1994) and Esteban and Ray (1994). As detailed in Duclos & Taptué (2015), measures of polarization include elements of inequality, but differ in that group homogeneity is important along with individual heterogeneity. Greater distances between individuals of different groups increase both inequality and polarization, whereas smaller distances between individuals of the same group decrease inequality but increase polarization.

There are different strands of polarization. Bipolarization conceptualises the process as "the disappearing middle class" (Wolfson, 1994). Another strand is the "identification-alienation framework" (Esteban and Ray, 1994). In this framework, polarization captures the extent to which individuals identify with others in their group, and are alienated from other groups. The third strand is multidimensional

polarization, which aligns most with our paper. This strand deals with multiple dimensions, caste and income in our case. Motiram and Sarma (2014) found that polarization by caste and consumption expenditure has increased since the 1990s. We add to the analysis by studying the trends in bipolarization and socioeconomic polarization in the distributions of wealth and consumption expenditure till the latest rounds.

4.1 Bipolarization

Bipolarization measures the distance between two groups defined in terms of a cardinal variable. The two groups are usually defined to be above and below the middle of the distribution. There are two properties of bipolarization measures: changes in spread and changes in "bipolarity". "Increased spread" refers to movements away from the middle of the distribution, i.e. if a person below the median becomes poorer or if one above the median becomes richer. Such movements would increase distances from the middle (bipolarization) as well as distances between individuals (inequality).

"Increased bipolarity" refers to movements where a richer and a poorer person on the same side of the median move towards each other. This results in clustering among those below the median or those above the median. Such movements would reduce inequality, but increase polarization. This property is the fundamental difference between the two concepts. The feature of increased bipolarity means that progressive transfers would reduce bipolarization only if they occur across the middle, i.e. from above the median to below it. A progressive transfer that occurs on the same side of the median would increase bipolarization. Needless to say, any progressive transfer would reduce inequality.

Place Table 5 here.

To measure bipolarization, we have applied the Foster-Wolfson index to the distributions of wealth, consumption expenditure and (Table 5). The trends broadly mirror those in the inequality of these distributions that we have already established. In the wealth distribution, there has been a steep increase in bipolarization over the two decades. As with wealth inequality, the steepest rise in bipolarization was between 2002 and 2012, and the increase was relatively sharper in urban areas.

There was also an increase in bipolarization in the distribution of consumption expenditure. As in the case of inequality, consumption expenditure polarization rose more steeply between 1993-94 and 2004-05, driven mainly by urban areas. The FW index increased in both rural and urban areas, but the pace of increase in urban areas was slower after 2004-05 than in the previous decade. These results imply that there was an increase in the concentration of individuals and groups at both ends of the distribution. Since 1991, there was thus an increasing economic divide between the groups on either side of the median.

Place Table 6 here.

To understand better the drivers of the rise in bipolarization, we have studied the trends in each of the components of the index (Table 6). The trends in all three indicators have reinforced the rise. In both distributions, the ratio of the mean to median increased, the share of the bottom half decreased and the Gini coefficient increased. These changes were sharper in the first decade in the consumption expenditure distribution and in the second decade in the wealth distribution; this is reflected in the changes in the bipolarization indexes as well.

Of the three components, the share of the bottom half in each distribution is the most striking – they owned less than 10% of the assets and consumed less than 30% of the total expenditure. Their asset ownership fell further after 1991 by almost 3 percentage points to 6% in 2012. The share of the bottom 50% in consumption expenditure declined by almost as much over the same period.

The rise in the mean-median ratio is also relevant; this indicates the skewness of the distributions towards the right of the median. In 2012, the mean of the wealth distribution was around 3.4 times the median. This shows the extent of wealth concentration among the sections above the median.

4.2 Identification-alienation framework

Esteban and Ray (1994) defined polarization differently with an arbitrary number of groups, as opposed to two in the case of bipolarization. They conceived income polarization within the "identification-alienation framework". By this framework, an individual identifies with other members of his own group but feels alienated from

members of other groups; polarization results from the interaction of these sentiments and may result in conflict. The Esteban-Ray (ER) index is defined as,

$$ER = \sum_i \sum_j p_i^{1+\alpha} p_j \mid y_i - y_j \mid$$

Here, p refers to the population shares and y refers to the income. The Gini coefficient is a special case of this index when the degree of sensitivity to polarization is set to zero. An extension of the ER index is used in the next section.

4.3 Socioeconomic Polarization

Socioeconomic polarization uses a social variable to classify the population into groups and then measures the distance between these groups through an economic variable. In this form, the properties of increased spread and bipolarity do not hold. Here, we use caste as the social variable and measure economic distances through wealth and consumption expenditure.

4.3.1 Esteban-Gradín-Ray index

One of the indices used to measure socioeconomic polarization is the extension to the ER index by Gradín (2000). The Esteban-Gradín-Ray (EGR) index uses both the economic and social variables to classify the population into groups, and aims to measure the correlation between social and economic polarization. This method operates in the same identification-alienation framework but includes the intra-group economic distribution and tries to identify whether the trends in polarization are driven by changes in the gaps between groups or in the group sizes. The index is defined as,

$$EGR(f, \alpha, \rho^*, \beta) = ER(\alpha, \rho^*) - \beta\,[G(f) - G(\rho^*)]$$

The EGR index is thus the ER index adjusted for the gap between the Gini for the overall population and the Gini calculated after dividing the population into groups. Along with the FW index, Table 5 shows the ER and EGR indices over time, after dividing the population on the basis of social group. The EGR index increased since the 1990s in both the wealth and consumption expenditure distributions. Comparing it to the trends in the ER index which only considers polarization on the economic dimension helps to understand the sources driving the trends.

There was a steady increase in the ER index, implying larger distances between the poles in the distribution. The gap between the EGR and ER would show the extent of identification between members of each social group. A greater level of identification would increase polarization between groups. The identification element in consumption expenditure increased in the first decade, but decreased during the second decade. Thereby, in the second decade, both the identification and alienation elements reinforced each other. Social groups increasingly identified with other members of their group and felt increasingly alienated from members of other groups in terms of consumption expenditure.

4.3.2 Zhang-Kanbur index

Another index used to measure socioeconomic polarization is the Zhang-Kanbur (ZK) index, applied after decomposition/n of the inequality index. The ZK index is defined as,

ZK = Between-group inequality / Within-group inequality

The between-group component measures the distance between groups; polarization increases if the groups move further away from each other. The within-group component measures the internal heterogeneity of groups. A fall in this component signifies that the differences between groups are magnified and polarization rises. The results from measuring socioeconomic polarization may differ from bipolarization, as the groups are not formed on the basis of the economic variable.

Place Table 7 here.

To calculate this index, we first decomposed the Gini coefficients into their within-group (WG) and between-group (BG) components (Table 7 and Table 8). In the wealth distribution, the between-group component in overall inequality remained roughly the same, but the within-group component increased sharply in the second decade. This is reflected in the Zhang-Kanbur index, which decreased in the second decade. While the inter-group heterogeneity remained the same, the intra-group homogeneity declined.

The story is more nuanced when we look at polarization by sector. Polarization rose steadily in urban areas with an increase in the share of between-group inequality

which outweighed that of within-group inequality. The economic divide between social groups became sharper in urban areas after 1991. In rural areas, it was within-group inequality that rose steadily while the gap between groups fell, leading to a decrease in rural polarization.

The extent of polarization is much sharper when we separate the OBC group from the forward castes, which is possible only with the 2002 and 2012 rounds. Considering polarization by four social groups in these two rounds shows that overall wealth polarization in fact increased over these ten years, contradicting the trend we see with three social groups. This shows that inclusion of the OBC category muffled the true extent of wealth concentration among the forward caste groups. The rise in wealth inequality between the four social groups exceeded that within these groups. This does not apply to rural wealth polarization, which is still lower in 2012 with four social groups. As earlier, this could be partly attributed to the emerging trend of a "creamy layer" among disadvantaged social groups, particularly the Scheduled Tribes, even though the members of this layer among such groups are still economically far below the creamy layer of forward caste groups (Zacharias & Vakulabharanam, 2011).

Place Table 8 here.

Polarization in consumption expenditure was quite high in absolute terms in the 1990s, and increased further by 2004-05 (Table 8). However, it fell over the next decade. As in the case of wealth polarization, this can be attributed to the steep rise in the inequality within social groups, while between-group inequality remained almost the same in absolute terms. As in the case of the wealth distribution, polarization is much higher when OBCs are separated and the analysis is done with four social groups. The combined group of OBCs and forward castes is a much more heterogeneous group, as OBCs are economically better-off compared to SCs and STs but worse-off compared to the forward caste groups. As such, the measured concentration of the distribution would reduce with three social groups instead of four.

This index was also applied to some of the major states in the country, to get a better idea of the regional trends. As in Zhang and Kanbur (2001), we applied the Theil index which is a generalised entropy index GE(1) to the consumption expenditure

distribution. The index was decomposed into within- and between-group components, and their ratio taken as in the earlier exercise. The results are given in Table 9.

Place Table 9 here.

The results indicate highest economic concentration on the basis of social groups in Odisha in both 1993-94 and 2011-12. Madhya Pradesh followed closely behind in the first round, but was outrun by Punjab by 2011-12. Apart from the high levels, there was a rise in both sectors of these three states. Three other states also had greater economic divide between social groups by 2011-12. This was driven by the rise in urban areas in Haryana, while it was driven by rural areas in the western states of Rajasthan and Gujarat. The only state which had a high level of socioeconomic polarization in 1993-94 but experienced a decline by 2011-12 was Karnataka. The states where it decreased included the other southern states and Himachal Pradesh, well-known for their history of social movements and relatively egalitarian social structures. However, it needs to be noted that even in four of the states where there was an overall decline, socioeconomic polarization increased in either one of the sectors.

Looking more carefully at the components of the index, there was an increase in both components in absolute terms in most states; it was the relative increase which determined the overall trend. However, it needs to be noted that in Tamil Nadu, Kerala, Andhra Pradesh and Maharashtra, the between-group component declined and the within-group component increased in absolute terms, reinforcing the decline in overall socioeconomic polarization. The next section would put all of the above trends and figures to understand the broader picture.

5 Discussion

We began by showing the overall trends in inequality in the distribution of wealth, consumption expenditure and income. Wealth distribution showed the highest level of inequality, followed by income and then consumption expenditure. All three distributions showed increases in inequality over time. The trends and levels negate the conclusion reached from earlier studies that India is a low-inequality country (Ahluwalia, 2011).

As our focus was to examine the role of caste in explaining these trends, we then looked at the social group composition of the topmost quantiles in each distribution. This reflected the disproportionate concentration of the forward caste groups in the topmost quantiles of the wealth distribution, at the expense of the historically disadvantaged groups. The shortfall of the SC/ST composition in these quantiles from their overall population shares has remained more or less constant over time.

Apart from the trends in inequality, we were also interested in plotting those in polarization. This has been conceptualised in various contexts. We looked at bipolarization, which showed a steady rise over time in the distribution of wealth and consumption expenditure. This signifies that the groups on either side of the median have increasingly moved away from each other and there is clustering at the extreme poles.

To visualise the clustering in the distribution with social groups, we constructed two types of socioeconomic polarisation indices. The Esteban-Gradín-Ray index operates in a framework of interaction between increasing alienation and identification. This index closely followed the trends in inequality, signifying a greater drift of social groups in terms of consumption expenditure in the first decade and in wealth in the second decade. As per the Zhang-Kanbur index, polarization in wealth was increasing; that in consumption expenditure was decreasing although its level in itself was high. In both cases, there was a much higher level with four social groups instead of three; this shows the extent of economic concentration among the forward caste groups, as compared to not just the SCs and STs but also the OBCs.

To explain these trends in inequality and polarization by social group, we need to better understand the market and non-market forms of discrimination that continue to be practised. In the traditional economic framework of the caste system, the occupation, property and other economic rights of each caste are fixed and non-transferable. Thorat details three forms of economic exclusion and discrimination against the SCs in particular. The first is by denying them jobs and factor inputs. They are also excluded from access to common resources and basic social services like drinking water, education and healthcare. The SCs are also barred from engaging in ocupations other than those involving manual labour or service to other castes. Through this, they are restricted from access to capital markets in other occupations.

The third form of economic discrimination is that SCs may be charged different prices for their purchases and may receive different prices for their output. There is also a high degree of landlessness among SCs, while land is concentrated among the OBCs and forward caste groups (Anand, 2016)

The practice of untouchability is linked to the notions of purity and pollution. The latest IHDS dataset revealed that 21% of the population reported still practicing untouchability in 2011-12; a similar percentage reported having experienced it in the last five years. Thorat (2009) described the results from an Action Aid survey of 550 villages across 11 states in 2001. Although the survey was conducted many years back, one can reasonably expect that at least some of these forms of discrimination still persist. Aside from the multitude of other non-economic forms of exclusion, SCs were discriminated in hiring practices and wage payments. Thorat characterised their terms of employment to be a mix of exclusion and inclusion. SCs were included more under oppressive employment conditions such as bondage, but excluded in the lean season in favour of the non-SC-ST workers.

Historically marginalised social groups are discriminated not just in the access to income and wealth but also in the access to basic services, which then leads to lower levels of health, nutrition and education. Through the 1990s and the early 2000s, the underweight prevalence among women and children and child mortality rates of the SC and ST groups were relatively higher. The decline in malnutrition prevalence was also slower among these groups. This is termed “the unequal burden of malnutrition” (Thorat & Sabharwal, 2011).

This imbalance in undernutrition prevalence was still clear in 2015-16 in the latest National Family Health Survey (Ministry of Health and Family Welfare, 2017). Although there have been improvements across groups over the last decade, the disparity between social groups has hardly changed. This is particularly true in the case of under-five child stunting (ibid.). The imbalance in the incidence of undernutrition and the slow pace of decline in deficiencies is rooted in the lack of access to health and sanitation services and safe drinking water for children and their mothers from the marginalised social groups. There are also substantial gaps between the literacy rates of SC/ST groups and others. The STs were the most deprived in terms of literacy; not even 50 percent of ST women were literate in 2011.

The point raised in the introduction of horizontal inequalities giving rise to conflict has also been borne out in the Indian case. Attempts to assert their rights have been frequently countered with verbal or physical abuse. Although the state has introduced acts, policies and programmes aimed at countering such situations, they have not been effective in preventing atrocities against marginalised social groups. Caste identities also interact with political forces and result in patronage and control. Such identities have also been crucial in forming the dominant business groups in the country (Damodaran, 2008).

Our paper contributes towards understanding the trends in economic inequality and polarization over the high growth period in the last decade. Besides contributing to the literature on inequality in India, this paper is also, to our knowledge, the first attempt to understand the trends in economic polarization between social groups. To conclude, unlike the usual argument that free markets do not discriminate between caste groups, the forward caste groups have been in a much better position to benefit from the gains from higher growth; they have maintained and improved their wealth positions over time.

6 Tables

Table 1 Gini coefficients of wealth, consumption expenditure and income

Year	Total	Rural	Urban
Wealth			
1991	0.65	0.62	0.73
2002	0.66	0.63	0.71
2012	0.74	0.67	0.77
Consumption			
1993-94	0.33	0.29	0.34
2004-05	0.36	0.30	0.38
2011-12	0.37	0.31	0.39
Income			
2004-05	0.54	0.51	0.48
2011-12	0.54	0.53	0.50

Source: Authors' calculations from AIDIS, CES and IHDS

Table 2 Shares of quantiles in wealth and consumption expenditure

	Monthly per capita expenditure			Per capita wealth		
	1993-94	2004-05	2011-12	1991	2002	2012
Share of bottom 90%	72.6	69.8	68.8	48.4	47.5	37.0
Share of bottom 50 %	28.5	27.0	26.1	9.0	8.8	6.1
Share of top 10 %	27.5	30.2	31.2	51.6	52.5	63.0
Share of top 1 %	6.6	8.0	8.8	16.9	17.0	27.6

Source: Authors' calculations from AIDIS and CES

Table 3 Wealth, consumption expenditure and income shares to population shares

	Wealth			Consumption			Income	
Social group	1991	2002	2012	1993-94	2004-05	2011-12	2004-05	2011-12
SC	0.46	0.45	0.40	0.79	0.78	0.80	0.72	0.80
ST	0.48	0.49	0.40	0.76	0.68	0.68	0.70	0.69
OBC + Gen	1.20	1.21	1.23	1.09	1.10	1.09	1.12	1.10
OBC as separate group								
OBC	--	0.90	0.83	--	0.92	0.93	0.88	0.91
Others	--	1.59	1.86	--	1.34	1.35	1.46	1.40

Source: Authors' calculations from AIDIS, CES and IHDS

Table 4 Gini coefficients of wealth, consumption expenditure and income by social group

	Wealth			Consumption			Income	
Social group	1991	2002	2012	1993-94	2004-05	2011-12	2004-05	2011-12
SC	0.59	0.58	0.64	0.28	0.30	0.32	0.46	0.48
ST	0.55	0.61	0.66	0.28	0.30	0.31	0.53	0.54
OBC + Gen	0.65	0.65	0.74	0.33	0.37	0.38	0.54	0.55

Source: Authors' calculations from AIDIS, CES and IHDS

Table 5 FW, ER and EGR Polarization indices

	Wealth			Consumption		
	1991	2002	2012	1993-94	2004-05	2011-12
Foster-Wolfson index						
Total	0.749	0.786	0.926	0.255	0.283	0.292
Rural	0.686	0.701	0.759	0.222	0.227	0.235
Urban	0.993	1.028	1.089	0.286	0.317	0.320
Esteban-Ray index						
Total	0.371	0.378	0.448	0.216	0.235	0.240
Esteban-Gradín-Ray index						
Total	0.230	0.230	0.250	0.102	0.111	0.122
Rural	0.227	0.220	0.227	0.094	0.099	0.108
Urban	0.243	0.260	0.277	0.114	0.122	0.128

Source: Authors' calculations from AIDIS and CES

Table 6 Components of Foster-Wolfson index

Year	Mean/ Median	Bottom 50%	Gini coefficient
Wealth			
1991	2.26	9.01	0.65
2002	2.41	8.74	0.66
2012	3.35	6.09	0.74
Consumption expenditure			
1993-94	1.26	28.65	0.33
2004-05	1.35	26.59	0.36
2011-12	1.36	25.90	0.37

Source: Authors' calculations from AIDIS and CES

Table 7 Gini decomposition and ZK Polarization indices of wealth

	1991	2002	2012	2002 (4)	2012 (4)
Gini	0.65	0.66	0.74	0.66	0.74
WG	0.61	0.62	0.69	0.60	0.66
BG	0.05	0.05	0.05	0.07	0.08
WG%	93.11	92.86	93.26	89.91	89.52
BG%	6.89	7.14	6.74	10.09	10.48
ZK	7.40	7.69	7.23	11.23	11.70
Rural					
Gini	0.62	0.63	0.67	0.63	0.67

WG	0.56	0.57	0.62	0.56	0.61
BG	0.06	0.05	0.05	0.07	0.06
WG%	90.97	91.51	92.72	88.96	90.94
BG%	9.03	8.49	7.28	11.04	9.06
ZK	9.92	9.28	7.85	12.40	10.00
Urban					
Gini	0.73	0.71	0.77	0.71	0.77
WG	0.71	0.68	0.74	0.66	0.70
BG	0.02	0.03	0.03	0.05	0.06
WG%	97.40	96.49	96.11	93.47	91.61
BG%	2.61	3.51	3.89	6.54	8.39
ZK	2.67	3.64	4.05	6.99	9.16

Source: Authors' calculations from the 48th, 59th and 70th rounds of AIDIS

Table 8 Gini decomposition and ZK Polarization indices of consumption expenditure

	1993-94	2004-05	2011-12	2004-05 (4)	2011-12 (4)
Gini	0.33	0.36	0.38	0.36	0.37
WG	0.31	0.34	0.36	0.31	0.33
BG	0.02	0.02	0.02	0.04	0.04
WG%	94.14	93.57	94.60	87.86	89.94
BG%	5.86	6.43	5.40	12.14	10.06
ZK	6.22	6.87	5.71	13.81	11.18
Rural					
Gini	0.29	0.31	0.31	0.31	0.31
WG	0.27	0.29	0.30	0.28	0.29
BG	0.01	0.02	0.01	0.02	0.02
WG%	95.38	94.55	95.66	91.98	93.87
BG%	4.62	5.45	4.35	8.02	6.13
ZK	4.85	5.76	4.54	8.72	6.54
Urban					
Gini	0.34	0.38	0.39	0.38	0.39
WG	0.33	0.36	0.38	0.34	0.36
BG	0.01	0.01	0.01	0.04	0.03
WG%	96.58	96.34	97.49	89.20	91.43
BG%	3.42	3.66	2.51	10.80	8.57
ZK	3.54	3.80	2.57	12.10	9.37

Source: Authors' calculations from the 50th, 61st and 68th rounds of CES

Table 9 ZK Polarization indices by state

	Total		Rural		Urban	
State	1993-94	2011-12	1993-94	2011-12	1993-94	2011-12
Himachal Pradesh	2.34	1.96	2.53	1.85	2.70	1.16
Punjab	6.67	12.11	6.45	12.96	5.30	8.11

Haryana	6.15	6.32	6.70	5.23	3.82	6.29
Rajasthan	3.05	4.97	2.47	5.51	2.70	0.81
Uttar Pradesh	4.29	3.16	3.52	1.99	4.30	1.94
Bihar	4.27	3.57	3.41	5.21	3.59	0.41
West Bengal	4.90	4.74	2.94	2.48	2.50	3.30
Odisha	8.76	12.22	8.74	12.61	4.43	6.73
Madhya Pradesh	8.45	9.52	7.39	9.03	1.69	3.19
Gujarat	6.21	8.17	4.46	5.16	2.60	1.81
Maharashtra	5.95	4.93	3.74	5.79	5.53	3.35
Andhra Pradesh	3.78	2.76	3.51	1.18	0.54	0.90
Karnataka	6.59	3.10	4.44	1.21	6.02	4.56
Kerala	1.84	0.51	2.20	1.41	1.06	1.78
Tamil Nadu	4.15	2.16	3.48	2.17	2.76	0.89

Source: Authors' calculations from the 50th and 68th rounds of CES

7 Figures

Figure 1 Shares in top and bottom 50% of wealth relative to population shares

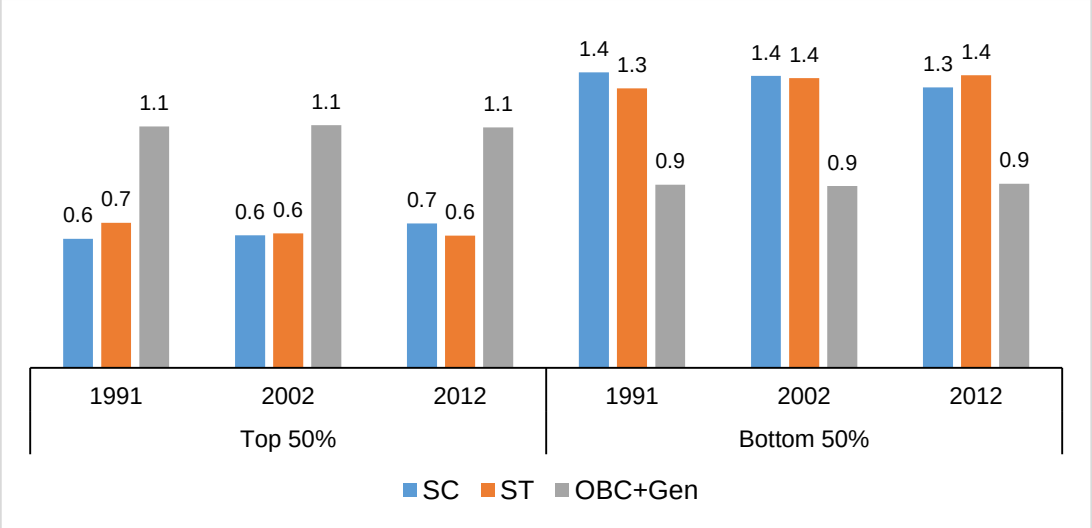
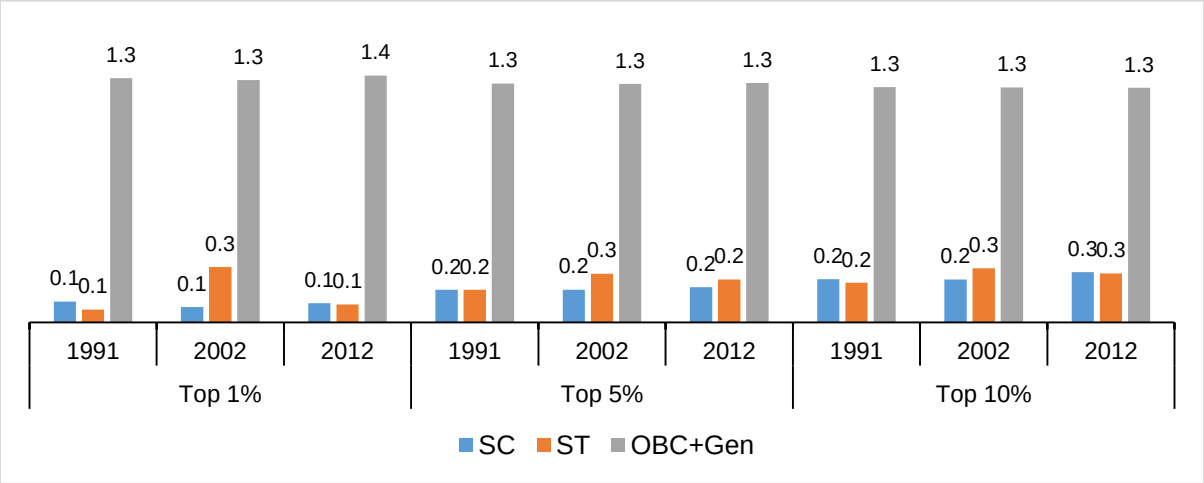


Figure 2 Shares in top quantiles of wealth relative to population share



Source (Figures 1 and 2): Authors' calculations from the 48th, 59th and 70th rounds of AIDIS

Figure 3 Shares in top and bottom 50% of consumption relative to population shares

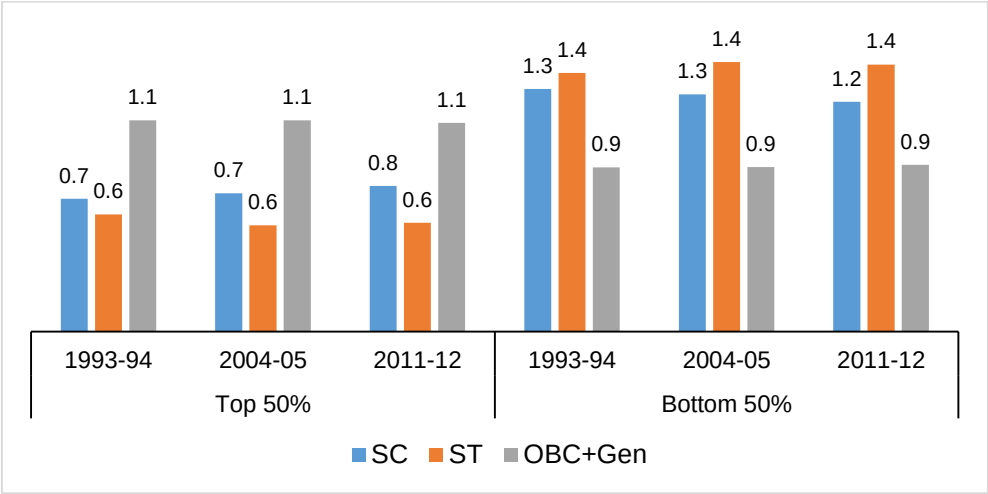
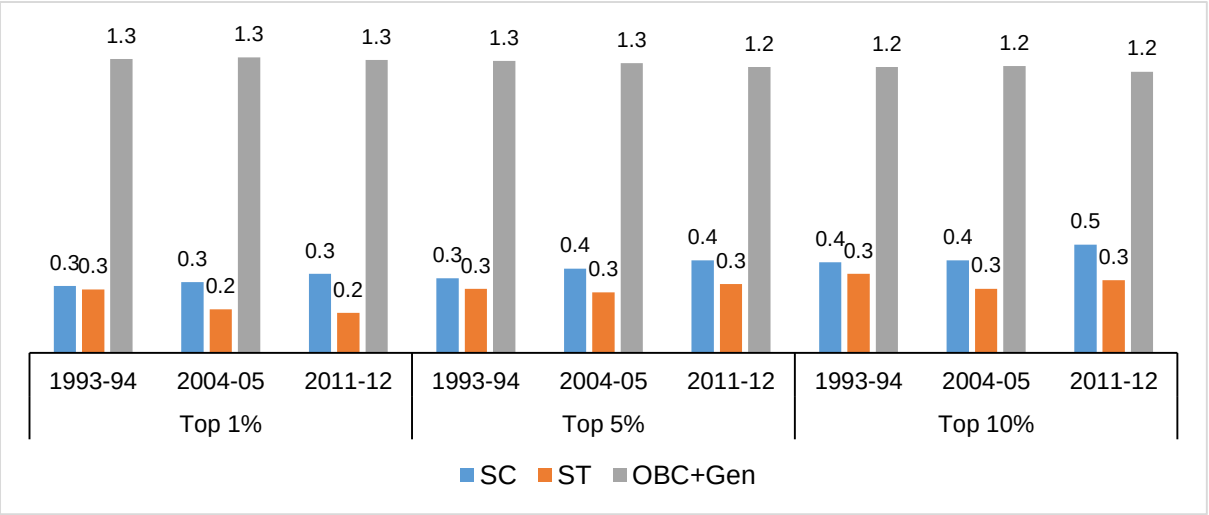


Figure 4 Shares in top quantiles of consumption expenditure relative to population shares



Source (Figures 3 and 4): Authors' calculations from the 50th, 61st and 68th rounds of CES

Figure 5 Shares in top and bottom 50% of income relative to population shares

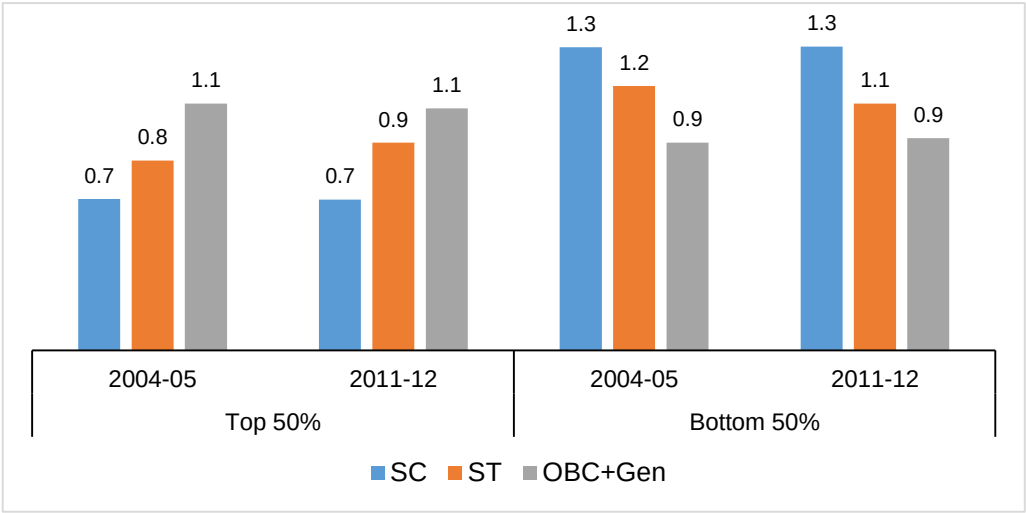
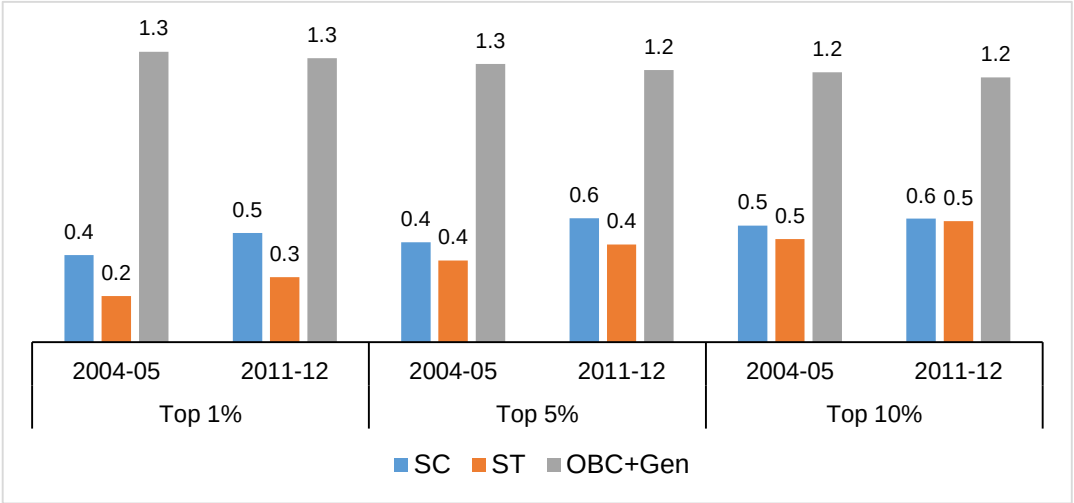


Figure 6 Shares in top quantiles of income relative to population shares



Source (Figures 5 and 6): Authors' calculations from IHDS-I and IHDS-II

Figure 7 Kernel density for per capita household wealth, 1991

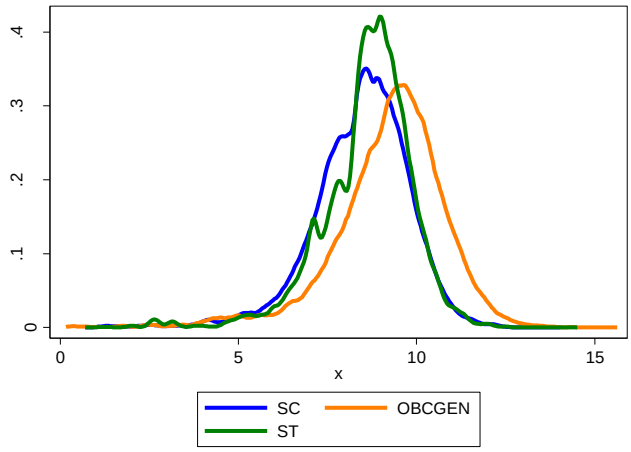


Figure 8 Kernel density for per capita household wealth, 2002

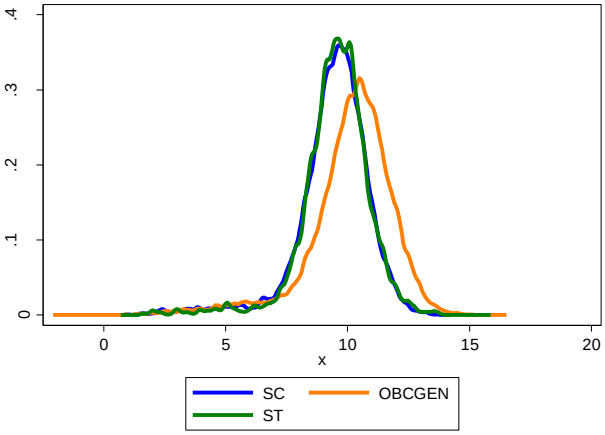


Figure 9 Kernel density for per capita household wealth, 2012

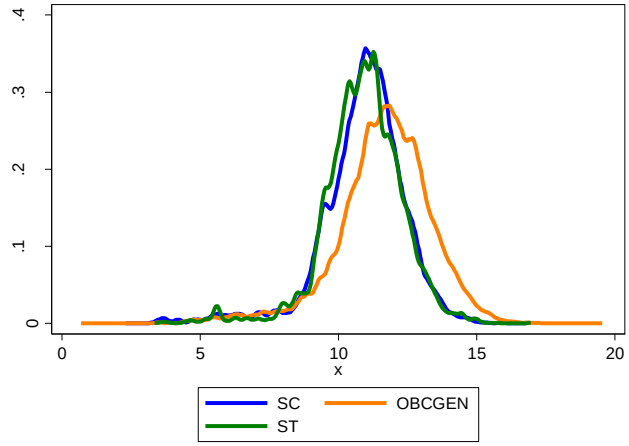


Figure 10 Kernel density estimates for monthly per capita consumption expenditure, 1993-94

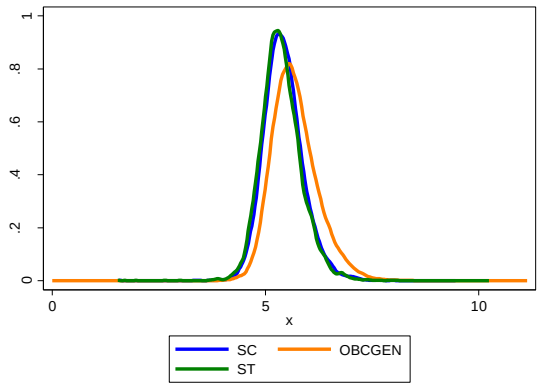


Figure 11 Kernel density estimates for monthly per capita consumption expenditure, 2004-05

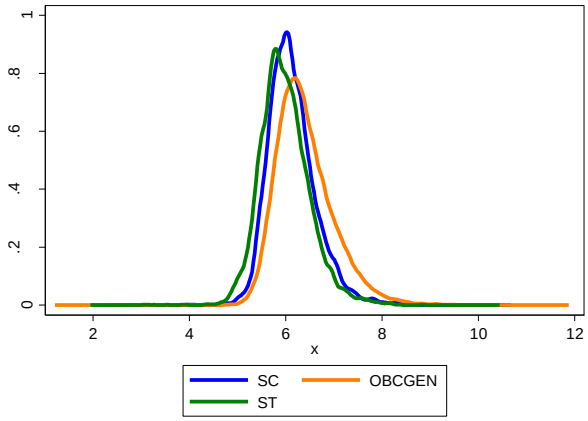
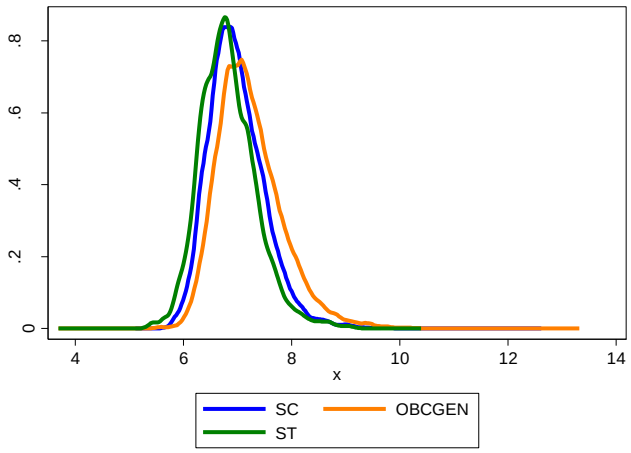


Figure 12 Kernel density estimates for monthly per capita consumption expenditure, 2011-12



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Notes:

[i] http://parliamentofindia.nic.in/ls/debates/vol11p11.htm