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Inter-group Inequality in Punjab: Does Caste Discrimination Weaken in Advance States?

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FOREWORD

Indian Institute of Dalit Studies (IIDS) has been amongst the first research organisations in India to focus exclusively on the development concerns of marginalised groups and socially excluded communities. Over the last twelve years, IIDS has carried out several studies understanding different aspects of social exclusion and discrimination against the historically marginalised social groups such as the Scheduled Castes, Scheduled Tribes, religious minorities, women and the disabled persons in India and other parts of the sub-continent.

The present paper on "Does Inter-group Inequality Weaken in Advance States: A Case of Punjab" examines the issues of Inter-group inequality between castes and religion. This working paper has tried to incorporate a rigorous investigation based on NSSO consumption expenditure and analysed the relative strength of determining factors of income, the decomposition of the differences between groups in income and between-group inequality. The first point that emerges from the study is that there is substantial disparity in MPCE between HC households, on one hand, and SC and OBC households, on the other. In fact, the SC households are more likely to get over-represented in the low-MPCE quintile groups than the HC households in the high-quintile group, irrespective of whether the household belongs to the Hindu or Sikh religion. The assessment of relative strength of the economic and non-economic assets clearly shows that the returns on these are relatively low among the SC households as compared to their HC counterparts. The decomposition analysis shows that these factors do not explain the differences in the MPCE between HCs and SCs (combined as well as separately for the Hindu and Sikh households) completely, but some part remains unexplained, which could be attributed to the discrimination effect. The decomposition of inequality also clearly brings out the 'between-group' contribution in inequality prominently in case of caste and it is substantially high in the case of Sikh and rural households.

We hope that this Working Paper would help in generating awareness and further deliberation across members of the academic fraternity, students, researchers, activists, civil society organisations and policy-making bodies.

Sanghmitra S. Acharya
Director

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Inter-Group Inequality in Pubjab:
Does Caste Discrimination Weaken in Advance States?

Nitin Tagade, Ajaya K. Naik and Chandrani Dutta

1. INTRODUCTION

Discrimination based on caste has been found to be weakening in different spheres of the Indian economy, as more and more people leave their traditional occupations and take up jobs which are 'caste free' in nature (Beteille, 2012). The various factors that have led to weakening of the roots of the caste system in India include increasing urbanisation, economic growth, mechanisation and commercialisation. This argument stems largely from the improved economic prosperity, employability, and occupational mobility among the various castes, as also from the declining visible notion of the purity of castes. However, some scholars share a different perspective. These scholars have found evidences of continued caste-based discrimination in both the economic and non-economic spheres. Thorat and Attewell (2010), Madheswaran and Attewell (2010) and Borooah (2005) have argued that discrimination based on caste persists in the country and while it is now not as explicit as it was in the past, continuing disparities between the high-caste and low-caste communities point to covert prevalence. There are ample evidences of the persistence of caste-based discrimination in the studies carried out by many scholars, which enlighten readers about the various discriminatory practices prevailing in the society. Discrimination exists at the entry level in the case of job markets (Thorat and Attewell, 2010; Deshpande and Newman, 2010; Jodhka, 2010), in the form of differential wages (Madheswaran and Attewell, 2010) and also in the non-market spheres, in the case of provisioning of basic services to target groups like children (Thorat and Lee, 2010), in school education (Nambissan, 2010; Human Rights Watch, 2014), and even in accessing shelter in large cities like Delhi (Thorat *et al.*, 2015).

This paper is an attempt to understand whether caste-based discrimination would decline to an insignificant level due to the high rate of economic growth. An attempt has also been made to understand whether caste-based discrimination is weakening from the point of view of Sikhism, a religion which was initially propagated to remove the caste-based divisions in Hindu society. The analysis is carried out using linear regression and Oaxaca-Blinder decomposition method. The case of Punjab has been analysed as it is one of the high-income states in India, while it is also one of the states exhibiting the highest degree of disparity between social groups (Chakraborty, 2001). The analysis in this paper is carried out based on 68th National Sample Survey Organisation (NSSO) on Consumption Expenditure for 2011-12. The paper would also analyse whether the philosophical tenets of Sikhism have been able to reduce the influence of caste in Punjab. This paper is divided into seven sections. Following the introduction in the first section, the second section provides a brief review on the inter-linkages between caste and economic development in the context of Punjab following the inter-group disparities in MPCE in the state are highlighted in the third section. The factors influencing inter-group differences in consumption expenditure are examined in the fourth section followed by the decomposition of MPCE in fifth section. The inter-group inequalities and their decomposition are discussed in the sixth section while the conclusion is presented in the last section.

2. THE CASE OF PUNJAB

Punjab is one of the most agriculturally as well as industrially developed states in India. According to Shergill and Singh (1995), rural poverty declined substantially in the early 1990s in Punjab largely due to the advent of the Green Revolution, while in the case of India as a whole, reduction in poverty became noticeable only after 2004 (Thorat and Dubey, 2012; Shukla and Mishra, 2014). In the rural agricultural belt, Jats control majority of the agricultural land, an outcome of the 1901 Punjab Land Alienation Act, which reserved landownership rights only to the agriculturalist castes of the state. Some of the communities like Mazhabis, Balmikis, Ravidasias and Chamars have historically denied of land ownership (Puri, 2003). In the aftermath of Green Revolution, mechanisation in agriculture led to many changes in traditional labour relations. It increased the demand for agricultural labourers. Wages also increased, thus augmenting the incomes of agricultural labourers in the state. Consequently, the Scheduled Castes (SCs),

who were otherwise practising their caste-based occupations, joined in large numbers to meet the increasing demand of agricultural labourers. Studies undertaken by Jodhka (2000; 2002) corroborated Beteille's argument that occupations in the age of mechanisation and commercialisation have become mostly 'caste-free'. However, occupational mobility, which took place in Punjab, reinstated the existing labour relations between the dominant landowner Jats and the lower-caste agricultural labourers. Even with the agrarian change taking place in Punjab, Jodhka (2002) argued that Dalits in the state remained un-free and 'attached' with the landowner Jats on a long-term basis. Jats remained at the privileged position of being the landowners, while the Dalits, despite having numerical strength in the rural areas, only had control of 3 per cent of agricultural land (Singh, 2012). Therefore, subjugation of the SCs by the dominant landowner classes continued despite economic development.

Religious composition of Punjab society reveals Sikhs as the dominant religious group at the aggregate level. However, Sikhs are a majority in the rural areas and Hindus dominate in the urban areas. As it is generally perceived that discriminatory practices based on caste, are considered a rural phenomenon, being agrarian and traditional, compared to an urban set up, it is in this sphere that a contradiction arises in the particular state. In rural areas, Sikhism became popular among both the landowning dominant communities like the Jats and among many SCs. Therefore, rural Punjab included both high-caste Sikhs who owned agricultural lands, and the low-caste Sikhs and Dalits. A large proportion of SCs in the state comprise the Mazhabis, Chamars and the Ad Dharmis, of which the latter two have become more socially advanced as compared to the Mazhabis (Jodhka, 2000). The Sikh religion is distinct from the Hindu religion in terms of its philosophical tenets and, discrimination based on the caste of an individual, does not have any religious sanction in Sikhism (Jodhka, 2002). However, such practices continued in the villages of Punjab (Jodhka, 2006). Moreover, relations between the landowning class and the labourers did not change even with agricultural development, as discussed earlier. Therefore, small landowners in Punjab shifted from their erstwhile occupations like agriculture to other activities, and agricultural labourers, who were mostly Dalits, in rural Punjab diversified into non-farm activities like vegetable vending, rickshaw pulling, brick moulding and other forms of causal labour, which was also a consequence of the social boycott of the Dalits by the landowning Jats (Singh, 2012).

Apart from Jodhka's (2002) finding of the persistence of the practice of untouchability from a field survey of 51 villages in the state, there is little evidence to validate the argument that discrimination would weaken or end in the event of high economic growth. Therefore, this paper attempts to determine whether discrimination, which is widely prevalent in Hinduism, is less likely to occur in other religions, especially Sikhism, which does not sanction such practices.

3. INTER-GROUP DISPARITIES IN MPCE

The economic and non-economic features of the household by socio-religious groups in Punjab in 2012 are presented in Table 1. The total number of estimated households in Punjab is 56.8 lakh, among which 16.4 per cent are Hindu SCs (HSCs), 21.6 per cent are Sikh SCs (SSCs), 11.9 per cent are Other Backward Castes (OBCs), 19.8 per cent Hindu High Castes (HHCs), and 25.8 per cent Sikh High Castes (SHCs), while the rest fall in the 'Others' category. The rural areas of the state are dominated by SHCs and SSCs. Of SHC and SSC households, 75 per cent and 86 per cent live in rural areas, respectively. The size of households by socio-religious groups does not vary much with the average household in the state having 4.5 members. However, a systematic pattern can be discerned in terms of the average Monthly Per Capita Consumption Expenditure (MPCE), which is lowest among the Sikh and Hindu SCs, and highest among the Sikh and Hindu HC households. The economic asset ownership in terms of the share of households owning any land in the state is highest among SHCs (96.7 per cent), followed by SSCs (93.9 per cent), OBCs (89.6 per cent), HSCs (81.4 per cent) and HSCs (71.8 per cent). The trend observed with respect to economic assets is also replicated for the non-economic assets. Hence the share of any literate person in the households is substantially highest among the SHCs, followed by the HHCs, OBCs, HSCs, and SHCs. An analysis of the share of households with higher education levels (that is, 'higher secondary and above' level of education) clearly points to the prevalence of a disparity among socio-religious groups. At the higher education level, HHCs outnumber SHCs with the figures for both being 56.6 per cent and 45.5 per cent, respectively, while both these groups together outnumber SCs (comprising both Hindus and Sikhs at more than 19.1 per cent of the total, and OBCs (at 30.0 per cent).

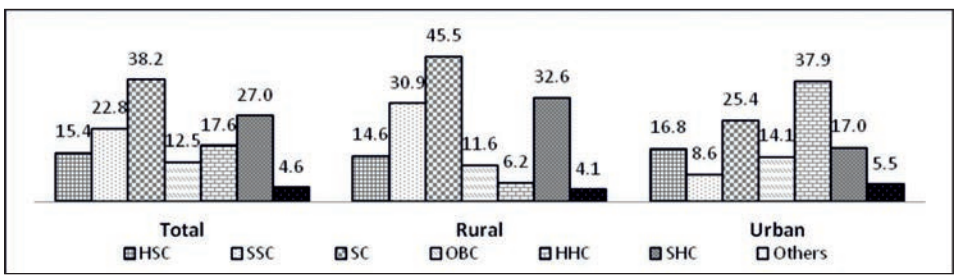
Table 1: Economic and Non-economic Asset Distribution by Socio-religious Groups in Punjab

Background Characteristics	HSCs	SSCs	OBCs	HHCs	SHCs	Others	Total
No. of households (HHs) (in '000)	934	1228	674	1123	1465	259	5683
Share of HHs (%)	16.4	21.6	11.9	19.8	25.8	4.6	100
Rural share of HHs (%)	55.3	85.8	54.8	20.9	75.0	55.2	60.1
Average HH size (in number)	4.23	4.76	4.76	4.02	4.72	4.55	4.51
Average MPCE (in Rs.)	1796	1656	2161	2829	3078	2194	2356
Share of HH's own land (in %)	81.4	93.9	89.6	71.8	96.7	81.1	87.1
Share of any literate in the HH (in %)	80.0	70.7	89.9	90.3	92.8	84.5	84.7
Share of highest education level of the HH at higher education level (in %)	19.7	19.1	30.0	56.6	45.5	29.3	35.0

Source: NSSO CE 68th round

The state of Punjab is somewhat different from others in its caste composition due to the dominance of Sikh religion unlike in other States in India where Hindus constitute the majority. In Punjab, 56 per cent of the population follows the Sikh religion, with the proportion being substantially high at 79 per cent in the rural areas of the state. The spread of Sikhism in the state is undeviating across social groups. Figure 1 shows the distribution of the population across social groups in 2012, wherein SCs, high castes and OBCs following the Sikh religion constitute about 23 per cent, 27 per cent and 7 per cent of the population, respectively. On the other hand, about 40 per cent of the population in the state is Hindu out of which SCs comprise 15.4 per cent and high castes 17.6 per cent of the total.

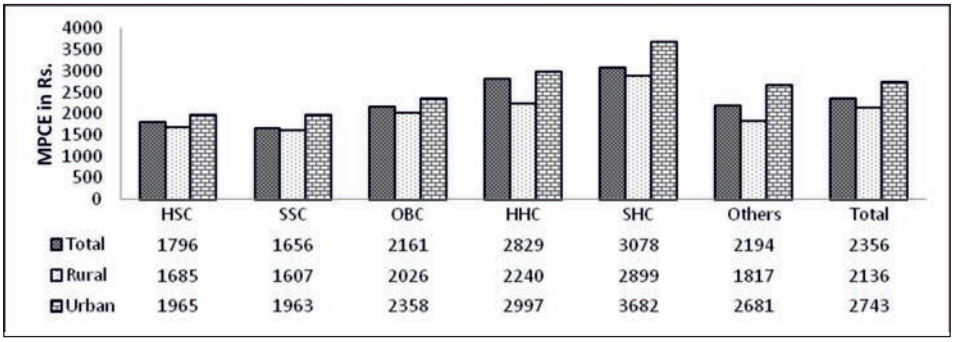
Figure 1: Share of Population by Socio- religious Groups in Punjab (in %) —2012



Source: NSSO CE 68th round

Figure 2 delineates a comparison of the MPCE across socio-religious groups in Punjab, which is disaggregated by rural and urban areas. The MPCE is highest among the SHCs at Rs. 3078, followed by Rs. 2829 among the HHCs, Rs. 2161 among the OBCs, Rs. 1656 among the SSCs and Rs. 1796 among the HSCs. The comparison between the HSCs and HHCs show that the MPCE of HHCs is 1.6 times higher than that of the HSCs. Similarly, the MPCE of SHCs is 1.9 times higher than that of the SSCs. Thus, the disparity between SHCs and SSCs is greater than the disparity between the HSCs and HHCs. A similar pattern is observed in the rural and urban areas with a higher disparity between the SHCs and SSCs in rural areas and urban areas, on one hand, and Hindus, on the other hand.

Figure 2: Comparison of avrage MPCE across Socio-religious groups in Punjab (In Rs.)—2012



	HSC	SSC	OBC	HHC	SHC	Others	Total
Total	1796	1656	2161	2829	3078	2194	2356
Rural	1685	1607	2026	2240	2899	1817	2136
Urban	1965	1963	2358	2997	3682	2681	2743

Source: NSSO CE 68th round

4. FACTORS INFLUENCING INTER-GROUP DIFFERENCES IN MPCE

The salient features of sample households have been illustrated in terms of their demographic, social and economic characteristics. In this section, these characteristics have been employed to estimate the relative strength of different factors affecting the MPCE of the households of various socio-religious groups in Punjab. We exclude OBC households from the analysis because of the low sample size and confine the analysis to SC and HC households belonging to the Hindu and Sikh religions at one place as well as separately in order to identify the differences between them on the basis of religion, which has an impact on social relations. It was hypothesised that the household's consumption expenditure (CE) would *inter alia* depend on the following factors:

1. The caste and religious background of the Household: SCs and High Caste (HCs) in Model 1. It is to be noted that these social groups are bifurcated on the basis of the Hindu and Sikh religions for estimating Model 2 and Model 3.
2. Adult (aged 21 years and above) literate in the household: Yes=1; Otherwise 0
3. The highest education level of adults (aged 21 years and above) in the household.
    a. Low, if up to middle school (reference category);
    b. Medium, if higher than middle school but less than higher secondary; and
    c. High, if higher secondary and above.
4. Place of residence: Urban=1; Otherwise 0.
5. Ownership of Land: Yes=1; Otherwise 0.
6. Total Land Possessed (in Hectares).
7. Total number of the members in the household.
8. Occupational Type of the Household
    a. Self-employed (SE)— Includes SE in agriculture and non-agriculture in the rural areas and SE in non-agriculture in the urban areas;
    b. Regular Wage/Salary earning—Includes households located in both rural and urban areas (Regular);
    c. Casual labour—Includes both agriculture and non-agriculture; and
    d. Others.

The coefficient on each of the variables listed above except the first was allowed to vary according to the caste of the households (as listed in variable 1). Consequently, if X_i represents the explanatory variables for the households *i*, *(i=1…N)*, then the equation is as follows:

$$CE_i = \alpha_1 \times HC_i + \alpha_2 \times SC_i + \beta_1 \times X_i + \beta_2 \times (X_i \times SC_i) + \varepsilon_i$$

where there are n households, indexed i = 1, 2,---------- n such that:

CE is the monthly consumption expenditure of household i

HCi=1, if the household i is a high-caste household, 0 otherwise

SCi=1, if the household i is an SC household, 0 otherwise

Xi is the value of the explanatory variable for household i

α and β are coefficients.

The interpretation of the coefficients in the above equation above is as follows:

1. The coefficients α_1 *and* α_2 are the intercept terms associated with HC and SC households, respectively. The presence of these terms ensures that the equation passes through the mean. In other words, if all the explanatory variables took as values their sample means, the predicted value of income would be the mean consumption.

2. The coefficient β_1 is the effect associated with the explanatory variable *for all households*.

3. The coefficient β_2 is the *additional* effect associated with the explanatory variable for *SC households only*.
   If β_2 is significantly different from zero, then this means that the variable has a (statistically significant) different effect on SC households as compared to its effect on HCH households. If β_2 is not significantly different from zero, then it means that there is no (statistically significant) difference in the variable's effect between SC and HC households.

Table 2 includes the following three models: for both Hindu and Sikh households in Punjab (1); separately for Hindu households (2) and; separately for Sikh households (3). The results in Model (1) using the households of both religions in Punjab reveals that the MPCE for HC living in urban area, engaged in casual labour, without land and with low educational levels would be Rs. 2550. Acquiring land assets would add Rs. 523 to the HC household. The acquisition of educational assets in terms of a literate person in the household would add Rs. 115 to this, and acquiring an educational asset in the form of an adult in the household educated to the level of matriculation or higher (the highest level of education) would add Rs. 1233. The change in the occupation also adds substantially to the income of HC households. Acquiring a regular salaried household status would add Rs. 814 to the MPCE of HC household.

Table 2: Regression estimates for the MPCE generating equation

VARIABLES	Model 1	Model 2	Model 3
	Total	Hindu	Sikh
HC	2550*** (268.5)	3008*** (442.7)	2815*** (604.4)
SC	2526*** (225.0)	2659*** (327.9)	2353*** (403.0)
Literate in HH	115 (147.2)	69 (247.2)	55 (190.2)
HH size	-293*** (19.49)	-331*** (31.08)	-269*** (26.05)
Land possessed (in hectares)	147*** (18.89)	198*** (71.05)	129*** (19.40)
Land owned	524*** (172.0)	210 (222.1)	358 (517.9)
SC#land owned	-264 (266.6)	39 (345.7)	29 (641.7)
Self-employed	726*** (218.1)	87 (412.9)	1249*** (292.0)
Regular salaried	814*** (229.3)	66 (415.3)	1598*** (318.1)
Others	1559*** (278.3)	1801*** (508.4)	1401*** (359.1)
SC#Self-employed	-416 (268.7)	231 (488.5)	-918*** (351.4)
SC# Regular salaried	-395 (279.5)	380 (490.3)	-1164*** (376.9)
SC# Others	-1034*** (386.1)	-1145* (640.4)	-1142** (545.5)
Rural	-306*** (114.5)	-563** (230.5)	-400*** (153.5)
SC#Rural	272 (179.9)	505 (314.1)	359 (256.1)
Medium education	380** (167.6)	740** (289.6)	41 (214.9)
Higher education	1233*** (161.8)	1930*** (278.2)	650*** (207.3)
SC#Medium education	-224 (214.7)	-497 (352.9)	94 (283.2)
SC#Higher education	-361 (227.5)	-939** (375.7)	176 (294.7)
Observations	2639	1201	1359
R-squared	0.696	0.661	0.738

Note: Standard errors in parentheses; and *** p<0.01, ** p<0.05, * p<0.1.

The results shown in Table 2 ascertain the changes in consumption expenditure among HC and SC households in accordance with the changes in their attributes (see Table 3). In fact, they change substantially with varying degrees HC households with respect to the SC households in several aspects. These were examined by considering the educational level, place of residence and occupational type of the household.

1. The educational asset of the households impacts the MPCE of SC households more than it does MPCE of HC households in Punjab. As

compared to the HC households, the return on the highest level of education (that is, education at the higher secondary level and above) is substantially low for SCs. For HCs, it adds up to Rs. 1233, whereas for the SCs, it adds up to Rs. 872.

2. As compared to HC households, the return on owning land is lower for SC households; for HC and SC households, owning land added Rs. 524 and Rs. 260, respectively, to the MPCE.

3. Living in urban areas vis-à-vis living in rural areas reduces Rs. 306 and Rs. 34 to the MPCE for of HCs and SCs, respectively.

4. The returns on different attributes between HC and SC households are of mix in nature. The HC household living urban area, engaged in casual labour, with low educational level and with no land would have higher MPCE of Rs. 3008 among Hindu compared to Rs. 2815 among Sikh. The return on many of the attributes are higher for HC as compared to SC households, but in the case of a few attributes the rate of returns are higher for SC households. The return on self-employed and regular salaried is high for the SCs as compared to HC households belonging to Hindu; while in the case of Sikh the returns of the medium and higher education is high for SCs as compared to HC households.

Table 3: Expected MPCE of household (in Rs.)

Source	Total		Hindu		Sikh	
	HC	SC	HC	SC	HC	SC
Intercept	2550	2526	3008	2659	2815	2353
Literate in HH	115	115	69	69	55	55
HH size	-293	-293	-331	-331	-269	-269
Land possessed (in hectares)	147	147	198	198	129	129
Land owned	524	260	210	248	358	387
Self-employed	726	310	87	318	1249	331
Regular salaried	814	419	66	446	1598	434
Others	1559	525	1801	656	1401	259
Rural	-306	-34	-563	-58	-400	-41
Medium education	380	156	740	243	41	135
Higher education	1233	872	1930	991	650	825

Source: Based on Table 2.

5. DECOMPOSITION OF THE DIFFERENCES IN MPCE BETWEEN HCs AND SCs

The relative strength of different economic and non-economic assets and place of residence show a differential impact on the consumption patterns of different socio-religious groups in the previous section. We have conclusively arrived at the significant differences in the MPCE due to the differential rate of returns on assets such as land ownership, education, and place of residence for HCs, SCs and OBCs. The other reason could be the differences in their asset endowments. Therefore, it is necessary to distinguish between the rate of return on assets and ownership of assets. Since both these differ across socio-religious groups, we decompose the difference in MPCE between HCs and SCs by using the coefficient of both the groups. We consider the differences on the following bases; firstly, if the SC assets receive an HC coefficient; and secondly, if the HC assets receive an SC coefficient. The previous models also clearly brought out the differential rate of returns on economic and non-economic assets between Hindu and Sikh households. Therefore, the decomposition has also been made to compare the differences between HCs and SCs belonging to Hindu and Sikh households separately.

Table 4 shows the results from the decomposition of the differences in MPCE between the HC and SC households in totality, comprising both Hindu and Sikh households; whereas Tables 5 and 6 show these for Hindu and Sikh households, respectively. Each table has two decompositions. The first decomposition relates to evaluation of the difference that would have been achieved if SC assets had received an HC coefficient. The second decomposition relates to evaluation of the difference that would have been achieved if HC assets had received SC rate of returns.

Table 4 shows that when SC and HC assets were evaluated by using the HC coefficient (asset returns) vector, of the total difference of Rs. 1415 in MPCE between the HC and SC households (belonging to both Hindu and Sikh religion). Of the total differences, an amount of Rs. 925 (65 per cent) could be explained by asset endowments between these two groups of households. However, when the SC and HC assets were evaluated by using the SC coefficients vector, an amount of Rs. 1250 (88 per cent) of the total differences of Rs. 1415 could be explained by differences in asset endowments between the two groups of households. In other words, the unexplained effect declined when the rate of returns of SCs was

considered instead of the HC rate of returns to evaluate the difference in asset endowments.

Table 4: Decomposition of the Difference in Mean MPCE between High Caste (HC) and Scheduled Caste (SC)

	Value	SE	Z value	p>|z|
Mean MPCE of HC	3345	66.67	50.18	0.00
Mean MPCE of SC	1931	35.67	54.12	0.00
Difference between HC and SC	1415	75.61	18.71	0.00
Decomposition of difference using HC coefficient vector				
Explained	925 (65.4)	101.27	9.13	0.00
Unexplained	490 (34.6)	116.10	4.22	0.00
Decomposition of difference using SC coefficient vector				
Explained	1251 (88.4)	201.90	6.19	0.00
Unexplained	164 (11.6)	207.23	0.79	0.43

Source: NSSO CE 68th round

Note: The figures in parenthesis indicates the contribution of explained and unexplained effect (%) in the MPCE differences.

In Tables 5 and 6, the differences in MPCE between HC and SC households are relatively higher for those following the Sikh religion as compared to those following the Hindu religion, with the figure being Rs. 1207 and Rs. 1684, respectively. Of the total differences, the amounts of Rs. 841 (70 per cent) and Rs. 1069 (64 per cent) can be explained by the asset endowment between the HCs and SCs belonging to the Hindu and Sikh households, respectively. In other words, the differences between HC and SC households belonging to Sikh religion are higher than the corresponding differences for households belonging to the Hindu religion. In fact, the differences in the asset endowments account for the higher proportion of differences in MPCE amongst the Hindu households as compared to their Sikh counterparts.

Table 5: Decomposition of the Difference in Mean MPCE between Hindu High Caste (HHCs) and Hindu Scheduled Caste (HSCs)

	Value	SE	Z value	p>|z|
Mean MPCE of HHC	3254	110.20	29.53	0.00
Mean MPCE of HSC	2047	59.29	34.53	0.00
Difference between HHC and HSC	1207	125.13	9.65	0.00
Decomposition of difference using HHC coefficient vector				
Explained	842 (69.8)	163.39	5.15	0.00
Unexplained	365 (30.2)	186.74	1.96	0.05
Decomposition of difference using HSC coefficient vector				
Explained	1206 (99.9)	318.16	3.79	0.00
Unexplained	1 (0.1)	325.74	0.00	1.00

Source: NSSO CE 68th round

Note: The figures in parenthesis indicates the contribution of explained and unexplained effect (%) in the MPCE differences.

Table 6: Decomposition of the Difference in Mean MPCE between Sikh High Caste (SHC) and Sikh Scheduled Caste (SSC)

	Value	SE	Z value	p>|z|
Mean MPCE of SHC	3518	86.57	40.64	0.00
Mean MPCE of SSC	1834	43.05	42.61	0.00
Difference between SHC and SSC	1684	96.68	17.41	0.00
Decomposition of difference using SHC coefficient vector				
Explained	1069 (63.5)	169.98	6.29	0.00
Unexplained	615 (36.5)	185.23	3.32	0.00
Decomposition of difference using SSC coefficient vector				
Explained	1470 (87.3)	344.73	4.26	0.00
Unexplained	214 (12.7)	349.73	0.61	0.54

Source: NSSO CE 68th round

Note: The figures in parenthesis indicates the contribution of explained and unexplained effect (%) in the MPCE differences.

5.1 Asset Endowment and Return Breakdown

The findings delineated in Tables 4, 5 and 6 indicate that the aggregate results help to quantify the extent of the differences in asset endowments and differences in asset returns between any two groups of households, while also showing that these differences contributed to the aggregate differences in their respective MPCEs. However, the findings in the tables do not specify which assets and their returns have a larger impact on the aggregate outcome.

Table 7 breaks down the aggregate results for HCs and SCs belonging to both the Hindu and Sikh religions while indicating the difference in the contributions made by the individual variables. Table 8 depicts the differences between the HC and SC households separately for the Hindu and Sikh religions. These estimates have been obtained by pooling the observations to estimate the common coefficient vector. Table 7 shows that when the observations were pooled to obtain a common coefficient vector, of the overall difference of Rs. 1415 in the MPCE between HC and SC households, Rs. 885 (63 per cent) could be explained by the inter-group differences in asset endowments while the remaining Rs. 530 (37 per cent) was the unexplained part due to differences in asset returns.

Half of the aggregate asset endowment effect of Rs. 1415, that is, Rs. 425 (30 per cent) was caused by differences between the HC and SC groups in proportion of their respective households, wherein the highest level of education of an adult was higher secondary or higher. The differences in the proportion of households comprising casual labourers contributed Rs. 188 (13 per cent) while the differences in terms of the land possessed contributed Rs. 182 (13 per cent).

The second panel of Table 8 details the contributions of the different assets to the unexplained contribution of Rs. 530 in the overall difference in the MPCE between the HC and SC households. In terms of the contribution to the unexplained part stemming from asset ownership, the differences between the HC and SC groups are as follows: land ownership contributed Rs. 412 (29 per cent) followed by the highest level of education, which contributed Rs. 101 (7 per cent), place of residence, which contributed Rs. 85 (6 per cent), and the medium level of education, which contributed Rs. 77 (5 per cent) to the total difference.

Table 7: Individual Contributions to the Decomposition of the Difference in MPCE between High Castes and Scheduled Castes, Pooled Estimates

	Value	SE	Z value	p>|z|
Mean MPCE of HC	3345	66.48	50.32	0.00
Mean MPCE of SC	1931	35.53	54.33	0.00
Difference	1415	75.38	18.77	0.00
Decomposition of Difference Using the HC Coefficient Vector				
Any literate in the HH	21.3	13.09	1.63	0.10
Highest edu. In the HH medium	-8.8	6.39	-1.37	0.17
Highest edu. In the HH high	425.0	39.35	10.80	0.00
Family size	23.0	25.54	0.90	0.37
Land possessed	182.1	34.11	5.34	0.00
HH type – Self employed	2.0	25.66	0.08	0.94
HH type – Casual labour	188.2	25.42	7.41	0.00
HH type – Others	8.7	6.89	1.27	0.21
Sector	42.4	14.05	3.02	0.00
Any land owned	0.7	4.03	0.18	0.86
Total	884.7	52.83	16.75	0.00
Decomposition of Difference Using the SC Coefficient Vector				
Any literate in the HH	122.7	174.46	0.70	0.48
Highest edu. In the HH medium	76. 9	54.58	1.41	0.16
Highest edu. In the HH high	100.8	74.66	1.35	0.18
Family size	-874.6	149.52	-5.85	0.00
Land possessed	-24.9	17.53	-1.42	0.16
HH type – Self employed	9.9	66.00	0.15	0.88
HH type – Casual labour	-86.9	36.12	-2.41	0.02
HH type – Others	19.0	31.50	0.60	0.55
Sector	85.2	68.20	1.25	0.21
Any land owned	412.5	202.56	2.04	0.04
Constant	689.5	304.02	2.27	0.02
Total	530.1	58.14	9.12	0.00

Source: NSSO CE 68th round

Table 8: Individual Contributions to the Decomposition of the Difference in MPCE between HCs and SCs (separately for Hindu and Sikh households), Pooled Estimates

	Hindu				Sikh			
	Value	SE	Z value	p>|z|	Value	SE	Z value	p>|z|
Mean MPCE of HC	3254	109.49	29.72	0.00	3518.03	86.07	40.87	0.00
Mean MPCE of SC	2047	58.82	34.80	0.00	1834.37	42.72	42.94	0.00
Difference	1207	124.29	9.71	0.00	1683.66	96.09	17.52	0.00
Decomposition of Difference Using the HC Coefficient Vector								
Any literate in the HH	13.7	8.62	1.59	0.11	28.88	17.73	1.63	0.10
Highest education in the HH-medium	-31.3	11.61	-2.69	0.00	10.10	8.66	1.17	0.25
Highest education in the HH -high	468.3	48.93	9.57	0.00	413.51	44.54	9.28	0.00
Family size	12.2	38.26	0.32	0.75	18.13	34.08	0.53	0.60
Land possessed	22.8	8.84	2.58	0.01	338.40	63.02	5.37	0.00
HH type – Self employed	1.4	17.78	0.08	0.94	2.67	34.43	0.08	0.94
HH type – Casual labour	144.1	22.28	6.47	0.00	242.23	33.17	7.30	0.00
HH type – Others	-8.5	9.77	-0.87	0.38	26.27	14.01	1.88	0.06
Sector	64.8	21.20	3.05	0.00	22.21	9.03	2.46	0.01
Any land owned	-4.4	7.66	-0.57	0.57	9.27	4.76	1.95	0.05
Total	683.1	61.90	11.04	0.00	1111.67	76.97	14.44	0.00
Decomposition of difference using SC coefficient vector								
Any literate in the HH	-71.7	195.38	-0.37	0.71	-164.74	326.12	-0.51	0.61
Highest education in the HH -medium	165.9	77.84	2.13	0.03	21.44	76.30	0.28	0.78
Highest education in the HH -high	522.1	140.88	3.71	0.00	-142.80	118.40	-1.21	0.23
Family size	-714.0	239.67	-2.98	0.00	-1147.04	197.47	-5.81	0.00
Land possessed	-17.6	9.84	-1.79	0.07	-66.87	32.04	-2.09	0.04
HH type – Self employed	86.8	84.67	1.02	0.31	-179.01	145.24	-1.23	0.22
HH type – Casual labour	-28.5	40.59	-0.70	0.48	-143.13	49.23	-2.91	0.00
HH type – Others	88.0	71.58	1.23	0.22	-61.41	29.02	-2.12	0.03
Sector	315.3	164.01	1.92	0.05	79.06	53.99	1.46	0.14
Any land owned	116.8	225.12	0.52	0.60	218.60	422.45	0.52	0.61
Constant	60.8	395.45	0.15	0.88	2157.89	521.82	4.14	0.00
Total	523.9	105.34	4.97	0.00	571.99	85.90	6.66	0.00

Source: NSSO CE 68th round

6. INTER-GROUP INEQUALITY

In the previous two sections, we observed how asset ownership and asset returns yield different MPCEs among the HCs and SCs. This inequitable distribution of the MPCE is because of asset ownership and asset returns. Therefore, an attempt has been made to measure the contribution of the various economic and non-economic factors in determining inequality, particularly the factors related to social and religious identity, land ownership, educational achievements, and the place of residence. These were explored on the basis of the decomposition of inequality.

In the beginning, we attempted to compare the distribution of households belonging to different socio-religious groups by MPCE quintile groups with their proportion in the total households. This would provide some insights on inequality between groups and also within each group. Table 9 shows the household size in the first row, the share of households by quintile groups in the second row (Row per cent) and the share of households by social groups in the third row (Col per cent). It shows that 9,34,000 households in Punjab are HSCs. Of this, 25 per cent were in Q1 and about 12 per cent were in Q5 (see Row per cent). Similar figures are given for the other six socio-religious groups. The third row (Col per cent) in case of HSCs indicates their distribution in each quintile group. The share of HSC households in Q1 was 25.4 per cent, of SSC households 30.4 per cent, and so on. Based on this table, we can also assess the over-representation and under-representation of each social group in different quintiles. First we examine the case of HSCs and HHCs. The share of HSCs in the total households is 16.4 per cent but their share is 25.4 per cent in Q1, 25 per cent in Q2, 18.4 per cent in Q3, 19.8 per cent in Q4, and 11.6 per cent in Q5. On the contrary, the share of HHCs in the total population is 19.8 per cent but their share is under-represented in the Q1 and Q2 quintiles and over-represented in the remaining quintile. Similarly, the share of SSCs is about 21.6 per cent but over-represented in the lowest three quintiles and under-represented in the highest two quintiles.

Table 9: Distribution of Population by Social Groups and MPCE Quintile Groups in Punjab —2012

Social Group	SRG	Q1	Q2	Q3	Q4	Q5	Total
HSCs	Number	238	231	172	185	108	934
	Row%	25.4	24.8	18.4	19.8	11.6	100
	Col%	26.7	22.2	14.8	15.5	7.8	16.4
SSCs	Number	373	306	278	167	103	1228
	Row%	30.4	24.9	22.7	13.6	8.4	100
	Col%	41.9	29.3	24.0	14.0	7.4	21.6
OBCs	Number	101	157	123	164	130	674
	Row%	15.0	23.3	18.3	24.3	19.2	100
	Col%	11.3	15.1	10.6	13.7	9.3	11.9
HHCs	Number	87	155	288	256	336	1123
	Row%	7.8	13.8	25.7	22.8	29.9	100
	Col%	9.8	14.9	24.9	21.5	24.0	19.8
SHCs	Number	34	155	247	353	676	1465
	Row%	2.3	10.6	16.8	24.1	46.2	100
	Col%	3.8	14.9	21.3	29.6	48.4	25.8
Rest	Number	58	38	50	69	44	259
	Row%	22.5	14.5	19.3	26.6	17.0	100
	Col%	6.5	3.6	4.3	5.8	3.2	4.6
Total	Number	891	1042	1158	1194	1397	5683
	Row%	15.7	18.3	20.4	21.0	24.6	100
	Col%	100	100	100	100	100	100

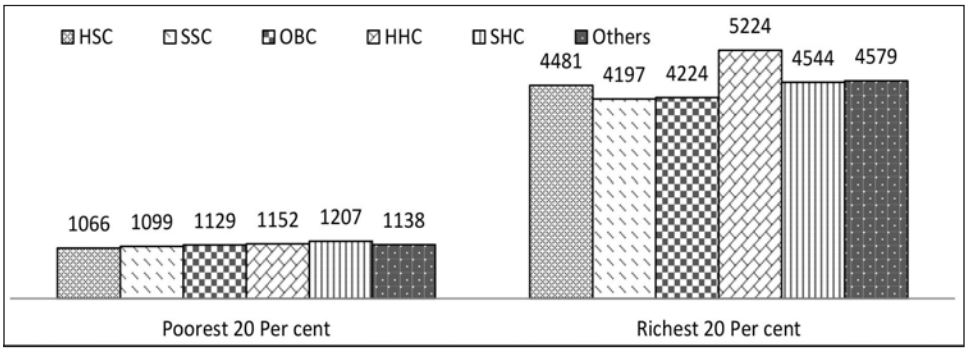
Source: NSSO CE 68th round

Note: The rows indicate population size (in 000'), row per cent and column per cent, respectively.

The mean MPCE varies across social groups in each quintile group. In the lowest quintile group, the average MPCE is Rs. 1066 among HSCs, Rs. 1099 among SSCs, Rs. 1129 among OBCs, Rs. 1152 among HHCs, and Rs. 1207 among SHCs. Similarly, in the highest quintile group, the average MPCE values are Rs. 4481, Rs. 4197, Rs. 4224, Rs. 5224, and Rs. 4544, for the HSCs, SSCs, OBCs, HHCs, and SHCs, respectively. Thus, the degree of inequality may differ across social

groups in different contexts but it is certainly the lowest among SCs as compared to that for HCs, irrespective of any context such as place of residence or religious following. This can be better expressed through the Gini Coefficient.[1]

Figure 3: Comparison of MPCE among Social Groups by the Richest and Poorest Quintile Groups in Punjab



Source: NSSO CE 68th round

6.1. THE DECOMPOSITION OF INEQUALITY

Inequalities are certainly observed in any population though they could be low, medium or high. However, it is important to understand the cause for inequality. Since the inter-group inequality is observed for distinct groups, it is imperative to determine both the between-group inequality and within-group inequality. Once these figures are determined, we can not only compare the within- and between-group inequalities but also observe how between-group inequality differs as the dividing line of groups is changed besides clearly identifying the prominent group in predicting between-group inequality.[2]

1 The Gini Coefficient is computed as half the mean of the difference in consumption expenditure between pairs of households divided by the average score. The formulation is

Gini is $G = \frac{1}{2N^2\mu}\sum_{i=1}^{N}\sum_{j=1}^{N}|C_i - C_j|$ where is number of households, is the MPCE of the households, and is the mean expenditure computed over all the households.

2 The decomposition of inequality is additive and therefore, overall inequality can be written as the sum of within-group and between-group inequality: $\underbrace{I}_{\text{overall ineqality}} = \underbrace{A}_{\text{within group inequality}} + \underbrace{B}_{\text{between group inequality}}$.

In other words, the share of B represents the contribution of between-group inequality to the overall inequality, whereas the share of A represents the contribution of within-group inequality.

Table 10 shows the results of the decomposition of the households' MPCE by sub-dividing the household sample in Punjab by the following variables: the caste, religion, highest education level of adults in households, land ownership, and place of residence.

The first point that is observed on undertaking this exercise is that the Gini Coefficient is the highest in urban areas as compared to the rural areas on the basis of caste. The second observation is that the inequality arrived at on the basis of the caste-based groups yields a slightly higher level of inequality as compared to that arrived at on the basis of religion, place of residence, land ownership and highest level of education. The third observation is that the highest proportion (19.7 per cent) of the overall inequality is explained by caste-based inequality, which further increases when it is applied only to the Sikh religion. The fourth observation is that caste is also an important predictor in rural areas, explaining more than 24 per cent of the overall inequality as compared to 11.5 per cent in urban areas. Thus, the contribution of between-group inequality is substantially high among the Sikh households and rural households, which clearly points to the prevalence of discriminatory practices against the SC households following the Sikh religion.

Table 10: Gini Ratio and Its Decomposition by Observable Characteristics in Punjab

Decomposition by	Gini Value	GE(0) Value	Within Group Contribution	Between Group Contribution
Caste	0.321	0.168	80.3	19.7
Caste within Sikh	0.313	0.159	73.4	26.6
Caste within Hindu	0.329	0.179	87.8	12.2
Caste within Urban	0.340	0.191	88.5	11.5
Caste within Rural	0.290	0.136	75.9	24.1
Religion	0.320	0.167	100.0	0.0
Place of Resident	0.321	0.168	93.6	6.4
Land own	0.321	0.168	98.5	1.5
Highest level of Education	0.312	0.160	84.5	15.5

Source: NSSO CE 68th round

7. CONCLUSION

Does caste-based discrimination would decline with high economic growth to an insignificant level? Is the extent of caste discrimination lesser among households belonging to the Sikh religion as compared to that among their counterparts belonging to the Hindu religion? These are some of the questions addressed in this paper through an analysis of inter-group inequality and the relative strength of the demographic, economic and non-economic assets in predicting the consumption expenditure of households in Punjab. The first question has been addressed by exclusively taking the state of Punjab for the analysis, keeping in mind the success of Green Revolution in the agriculture sector with respect to India's development strategy in the initial phase. The second question has been addressed by analysing the discrimination separately for Hindu and Sikh households. For the purpose, we have used the Blinder - Oaxaca (1973) decomposition method to explain the difference in consumption expenditure among HC and SC households.

The first point that emerges from the above observations is that there is substantial disparity in MPCE between HC households, on one hand, and SC and OBC households, on the other. In fact, the SC households are more likely to get over-represented in the low-MPCE quintile groups than the HC households in the high-quintile group, irrespective of whether the household belongs to the Hindu or Sikh religion. The assessment of relative strength of the economic and non-economic assets clearly shows that the returns on these are relatively low among the SC households as compared to their HC counterparts. For example, the rate of returns on land ownership is Rs. 524 for HCs (Rs. 210 for HHCs and Rs. 358 for SHCs) as compared to that of Rs. 260 among SCs (Rs. 248 for HSCs and Rs. 387 for SSCs) and the rate of returns on higher education is Rs. 1233 for HCs (Rs. 1930 for HHCs and Rs. 650 for SHCs) as compared to that of Rs. 872 among SCs (Rs. 991 for HSCs and Rs. 825 for SSCs). However, the rate of returns between HC and SC are again differs between the Sikhs and Hindus. In some of the attributes, the HSCs have higher returns but SSCs does not. Similarly in a few attributes, SSCs have higher returns but HSCs does not. For example, the returns of the occupational type have higher returns for HSC households as compared to HHC households; but in the case of education SSC households have higher returns than SHC households.

The decomposition analysis shows that these factors do not explain the differences in the MPCE between HCs and SCs (combined as well as separately for the Hindu and Sikh households) completely, but some part remains unexplained, which may be attributed to the discrimination effect. For example, 35 per cent of the difference in the MPCE between HC and SC households is unexplained (the difference in MPCE between HHCs and HSCs is 30 per cent while that between SHCs and SSCs is 36 per cent). Some researchers argue that this unexplained part may not entirely be attributed to discrimination, but could also possibly be the effect of past discrimination (Madheswaran and Attewell 2010).

The decomposition of inequality also clearly brings out the 'between-group' contribution prominently in the case of caste, and shows that it is substantially high in the case of Sikh and rural households.

Thus, the results suggest that economic growth alone may not be a contributing factor for weakening caste-based discrimination. The prejudices based on social identity also account for the unequal outcomes stemming from caste-based discrimination.

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