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Decomposing Nutritional Inequality by Caste and Class: A Quantitative Approach to Reckon Intersectionality

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Abstract

We decompose inequality in nutritional status of Indian children along the axes ofcaste and economic class. Inequality is measured by the most commonly decomposed measures of the General Entropy Class. We first use the traditional method of inequality decomposition and find out how the 'between group' component differs when we consider different groupings, namely caste, class, and caste-class intersections. However, since the traditional method of inequality decomposition is sensitive to the relative sizes and the number of groups under question, the decompositions are not comparable across alternative groupings.In this paper, we use a corrected method of inequality decomposition and show that compared to the traditional method, it is more meaningful even in the non-income space.

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1. Introduction

While the last few decades have witnessed a surge in reckoning inter-group inequality in health equity research, most studies have analysed health inequalities along single dimensions of social power, implicitly assuming that these dimensions are inherently separable and mutually exclusive. Only a few have considered the complex interactions of multiple identities in shaping health inequalities using the framework of intersectionality. In the context of India, interactions of multiple identities, such as the gender- and caste-based identities, have been the focus of a few studies on inequalities in economic outcomes. Deshpande (2007) contended that analyses of gender-caste overlap from an economic perspective could be a useful contribution to the debate over identity and economic outcomes. She tried to quantify some aspects of the gender-caste overlap in India in some of her earlier papers as well (Deshpande, 2001b, 2002).The literature on intersectionality particularly in the realm of feminist studies, on the other hand, has predominantly used qualitative methodologies. A few quantitative studies on health inequality have used the regression approach, treating the dependent health variable as categorical and creating a set of dummy variables for each intersecting category (Sen *et al*., 2009; Sen and Iyer, 2012; Mukhopadhyay, 2015; Mukhopadhyay, 2016). By doing so, the studies have examined the differences between groups across the social spectrum, to see if the disadvantage associated with a particular group identity is offset by the advantages stemming from some other identity; for instance whether poor women belonging to upper castes can leverage some benefits (in terms of some health outcome) from their caste identity, as compared to poor women from backward castes. While the purpose of such analysis is undoubtedly important and interesting, there is still no study that measures the contribution of intersectional inter-group inequality in total interpersonal inequality. Drawing on the literature on the decomposition of income inequality, we attempt to quantify how much of total inequality can be explained by inter-group intersectional inequality.

We decompose inequality in nutritional status of Indian children along the axes of caste and economic class. Inequality is measured by the most commonly decomposed measures of the General Entropy Class. We first use the traditional method of inequality decomposition and find out how the 'between group' component differs when we consider different groupings, namely caste, class, and caste-class intersections. However, since the traditional method of inequality decomposition is sensitive to the relative sizes and the number of groups under question, the decompositions are not comparable across alternative groupings. For instance, by the traditional method, the shares of 'between group' inequality in income (groups defined in terms of racial identities) in three countries infamous for racial inequality (namely United States, Brazil and South Africa) have been shown to be 8%, 16% and 33% respectively (Elbers *et al*., 2008). The authors question if 'these numbers provide a good yardstick with which to judge the relevance of race to an understanding of inequality in these countries'. They point out that while the mean difference in income between the white and non-white groups is stark in all three countries, the population shares of the white versus non-white groups vary drastically (with non-whites comprising 80%, 50% and 28% of the population in South Africa, Brazil and the United States respectively). Again, the number of racial groups is also not invariant across the countries (four for Brazil and South Africa and five for the United States). Elbers *et al*. (2008) illustrate that the difference in the share of the 'between group' component may not be reflective of the differences in relative mean incomes alone, since it is not normalised for differences in number and relative size of groups. They also point out that the share of the 'between group' component in total inequality, as decomposed by the traditional method, has been typically low since it is taken to be the ratio between observed group inequality and total (or interpersonal) inequality. The latter may also be looked upon as a particular type of 'between group' inequality, where every household (or individual, depending upon the unit of analysis) constitutes a separate group. The authors argue that it is perhaps unrealistic to compute the share of observed 'between group' inequality against the benchmark of total interpersonal inequality, since actual number of social groups considered in a decomposition exercise is too small compared to the total population. They suggest an alternative measure of the share of 'between group' inequality that is normalized with respect to the number and relative size of groups. They replace total inequality in the denominator of the traditional ratio with the 'maximum between-group inequality that could be obtained if the number of groups and their sizes were restricted to be the same as for the numerator'. The modified measure allows meaningful comparison of 'between group' inequality across different social settings, where the number and relative size of groups are different.

In this paper, we show that compared to the traditional method, the corrected method of inequality decomposition is more meaningful even in the non-income space. It would thus be incorrect to comment on the relative salience of groupings based on a comparison of the magnitudes of the 'between group' components, as decomposed by the traditional method. When we classify children into two broad groups according to possession of household wealth, poor and non-poor, we find that a little more than 2% of total inequality in nutritional status is explained by the 'between class' component. However, considering five wealth classes of the same population of children, we find that the 'between class' component explains about 5% of total nutritional inequality among Indian children. Not only is the traditional method of inequality decomposition sensitive to the number of groups, it is also affected by the relative composition of groups. For instance, the proportion of poor children (comprising those from households belonging to the bottom wealth quintile in the entire country) in the developed state of Kerala is much lower compared to that in the backward state of Madhya Pradesh. Considering two groups of children, poor and non-poor, we find that while the 'between class' component explains 0.7% of total nutritional inequality in Kerala, about 4% of total nutritional inequality is explained by the 'between class' component in Madhya Pradesh.

Again, the 'between group' component is bound to increase when we consider intersections, since that automatically increases the number of stratifications. Elbers *et al*. (2008) illustrate that studies using the traditional method to decompose income inequality suffer from this limitation. Research on the decomposition of inequality in the non-income space has been rather limited. Few studies that decompose inequalities in human development outcomes such as education and health do so using the traditional method of decomposing of income inequality (Pradhan *et al*., 2003; Sahn and Younger, 2007).

We apply the method proposed by Elbers' *et al*. (2008) to decompose inequalities in nutritional status of children and examine the relative salience of caste and economic class as grouping parameters. We also question if the 'between group' component actually increases when we go beyond single axis groupings and consider their intersections. The following section details the relevant social groupings across which nutritional inequality is decomposed. Section 3 discusses the data source and the methods used for this study. Section 4 presents and discusses the results of the empirical analysis. Section 5 concludes the paper, highlighting the importance of the approach in terms of policy formulation.

2. The relevant social groupings: caste and economic class

Deshpande (2001a) observed that ‘the suggestion of a broad, albeit not very clearly defined correspondence between caste and economic status, particularly at the upper and lower ends, may at first blush appear to be conventional wisdom’. Indeed, many studies have demonstrated a close correspondence between caste and economic status that follows from a systematic deprivation in terms of access to productive resources alongside discrimination in the labour market (Borooah, 2005; Desai and Dubey, 2011; Thorat and Newman, 2010). This perhaps explains why the complex interactions of caste and economic class in shaping human development outcomes have not received enough scholarly attention. However as Beteille (1965) observes, though ‘the hierarchies of caste, class and power’‘overlap to some extent’, they also ‘cut across.’ Of the few studies that address the intersectionality of caste and class, Shah (1985) has shown how even within the poor, the upper caste households leverage a caste-advantage in terms of educational achievement. Recent literature on the subject argues that the complexity of social stratification, defined at the intersection of the two axes of caste and economic class, needs to be critically analysed in the current context, since the ascriptive identity of high caste does not automatically bring with it an economic advantage, as it used to earlier (Venkataraman, 2014).

In this paper, the term ‘class’ has been broadly defined to classify children into two groups: those from poor households and those from non-poor households. The NFHS provides a wealth index factor score for each household, based on factor analysis of 33 variables, including housing characteristics and possession of certain assets. We define the subset of poor children as those who belong to households from the bottom quintile of the wealth index factor score. In our analysis caste comprises the officially recognised categories of Scheduled Caste (SC), Scheduled Tribe (ST), Other Backward Caste (OBC) and Others. Since our objective is to study the caste-class interactions in defining nutritional inequalities, we restrict our analysis to children from Hindu households that comprise 82 percent of the total population (IIPS and ORC Macro, 2007). The caste system being a typical feature of the traditional Hindu society, inclusion of children from other religions in the category of ‘Others’ would have convoluted the analysis (Deshpande, 2000).To consider the intersection of caste and class, we have eight groups of children, namely, poor SC, non-poor SC, poor ST, non-poor ST, poor OBC, non-poor OBC, poor Others and non-poor Others.

3. Data and Methods

3.1 The Data Source

We use data on 46,655 children below five years from the third and latest round of the National Family Health Survey of India, conducted in 2005-06.The National Family Health Surveys (NFHSs) are nationwide surveys conducted with a representative sample of households throughout the country. Until now, three such surveys have been conducted: NFHS-1 (1992–93), NFHS-2 (1998–99) and NFHS-3(2005–06). These surveys, organized by the Ministry of Health and Family Welfare of the Government of India, aim to develop a demographic and health database for the country. The NFHS provides nation and state-level estimates of fertility, family planning, infant and child mortality, reproductive and child health, nutrition of women and children, the quality of health and family welfare services and socioeconomic conditions. Standardized questionnaires, sample designs and field procedures are used, following the general format of Demographic and Health Surveys (DHS Programme, 2015). The urban and rural samples within each state were drawn separately and the sample within each state was allocated proportionally to the size of the state’s urban and rural populations. A uniform sample design was adopted in all states. In each state, the rural sample was selected in two stages, with the selection of Primary Sampling Units (PSUs), which are villages, with probability proportional to population size (PPS) at the first stage, followed by the random selection of households within each PSU in the second stage. In urban areas, a three-stage procedure was followed. In the first stage, wards were selected with PPS sampling. In the next stage, one census enumeration block (CEB) was randomly selected from each sample ward. In the final stage, households were randomly selected within each selected CEB. The third round of the NFHS collected information from a nationally representative sample of 109,041 households, 124,385 women aged 15–49, and 74,369 men aged 15–54 living in all the 29 states of India. NFHS-3 enumerated a total of 515,507 individuals who stayed in the sample households the night before the interview. Anthropometric data were collected for 46,655 children, below five years of age, who stayed in the household the night before the interview (IIPS & ORCMacro, 2007).

Majority of women and men are Hindu (81 and 82 percent, respectively) and a minority are Muslim (14 and 13 percent, respectively), followed by Christians, Sikhs, and Buddhists/Neo-Buddhists. All other religions account for less than 1 percent of the female and male respondents. 19 percent of women and men belong to the scheduled castes, eight percent to the scheduled tribes, and 39 percent to the other backward class. 48% of children under five years of age are stunted and 43 percent are underweight. A substantial portion of children are severely undernourished, 24 percent according to height-for-age and 16 percent according to weight-for-age. One in five of children under five years of age are wasted.

3.2 Methods:

Borrowing from the income inequality literature, we measure inequality in nutritional status by the measures of the General Entropy Class (Cowell and Jenkins, 1995), given by:

$GE(c) = 1/nc(c-1)\ \Sigma_i\ [(y_i/\mu)^c - 1]$ for $c \neq 0,1$

$= 1/n\ \Sigma_i \log(\mu/y_i)$ for $c = 0$

$= 1/n\ \Sigma_i [(y_i/\mu)\log(y_i/\mu)]$ for $c = 1$

where n is the total population, y_i is the outcome (in our case height-for-age percentage) of individual i, μ is the mean outcome and c is a parameter, chosen by the researcher.

As the value of c increases, the sensitivity to inequality among those in the upper end of the distribution increases. While Theil entropy measure is obtained from a c value of 1, a c value of 0 gives Theil L or mean log deviation. GE (2) is ordinally equivalent to the squared coefficient of variation (Elbers *et al.*, 2008).

The General Entropy class of measures can be conveniently decomposed into a ‘between group’ and a ‘within group’ component (Cowell and Kuga, 1981; Shorrocks, 1984), as illustrated below:

$GE = 1/c(c-1)\ [\Sigma_j\ g_j\ (\mu_j/\mu)^c - 1] + \Sigma_j\ GE_j\ g_j\ (\mu_j/\mu)^c$ for $c \neq 0, 1$

$= [\Sigma_j\ g_j \log(\mu/\mu_j)] + \Sigma_j\ GE_j\ g_j$ for $c = 0$

$= [\Sigma_j\ g_j\ (\mu_j/\mu)\log(\mu_j/\mu)] + \Sigma_j\ GE_j\ g_j\ (\mu_j/\mu)$ for $c = 1$

where j is the population sub-group, g_j is the population share of the j^{th} subgroup and GEj is the inequality within the jth subgroup.

While the first term depicts the 'between group' component of total inequality, the second term denotes inequality within the subgroups. The 'between group' component gives the level of inequality pertaining to a distribution where everyone within each subgroup has the same outcome μ_j (Elbers *et al.*, 2008). The between group component can be summarized as follows.

$R_B(\prod) = I_B(\prod)/I$,

for any population partition ∏, where $I_B(\prod)$ is the 'between group' component and I is total inequality.

However, since the traditional method of decomposition of total inequality into 'between group' and 'within group' components is sensitive to the number and relative sizes of the groups under examination, the decompositions are not comparable across different groupings. Also, the contribution of the 'between group' component automatically increases when we consider a large number of intersectional groups across the social spectrum. To overcome this problem, we follow Elbers *et al.* (2008), who argue that total inequality is an extreme benchmark to find out the contribution of the 'between group' component and propose to evaluate the 'between group' component against a benchmark of maximum possible 'between group' inequality, keeping the number and relative sizes of groups for the same partition unchanged. The benchmark is in fact a 'counterfactual between-group inequality constructed from the same data, using the same number of groups and relative sizes, but where households in the income distribution are reassigned to the population groups in such a manner so as to maximize between-group inequality' (Elbers *et al.*, 2008). The index proposed by Elbers *et al.* (2008) is given by

$R_B\hat{}(\prod) = I_B(\prod)/\{Max\ \{I_B|\prod\ (j(n), J)\} = R_B(\prod)\ I/Max\{I_B|\prod\ (j(n), J)\}$

where the denominator gives 'the maximum between-group inequality that could be obtained by reassigning individuals across the J sub-groups in partition ∏ of size j(n)'.

We illustrate the method with a hypothetical example. Suppose there are two racial groups in a society, with population shares 20% and 80% respectively. 50% of the first group and 30% of the second group are respectively undernourished. The counterfactual distribution would partition the population into two groups, the first comprising the bottom 20% of the nutritional distribution and the second comprising the rest. The 'between group' component of the decomposition exercise, applied to the counterfactual distribution is thus the 'maximum possible' 'between group' inequality. The corrected method takes this (as opposed to total interpersonal inequality) in the denominator and calculates the share of 'between group' inequality in the actual distribution. We similarly construct counterfactual groups from the nutritional distribution corresponding to the groups formed along economic class, caste and the intersectional categories. Table 3 shows how the population shares of the counterfactual groups match their 'nutrition shares' (analogous to the notion of income shares). Elbers *et al* (2008) illustrate this point with reference to South Africa. They show that when inequality is decomposed by racial group defined in terms of a "white/non-white" classification, the conventional decomposition suggests that only about 27% of inequality is attributable to between-group differences. Their alternative statistic, on the other hand, shows that two groups are 80% of the way towards a completely partitioned South African income distribution. We reassign children constructing counterfactual distributions for each partitioning (namely caste, class and caste-class intersections), keeping the number and relative sizes of subgroups the same, so that 'between group' inequality is maximised.

In this paper, we show that compared to the traditional method of inequality decomposition, the corrected method is more meaningful even in the non-income space. We argue that though anthropometric indicators are cardinal in nature, the inequality decomposition exercise cannot be directly translated from the income space to the space of child nutrition. While the interpretation of inequality in the income space invokes the notions of relative deprivation, envy and 'lag of real accomplishments behind expectations' (Hirschman and Rothschild, 1973), inequality in health and nutrition can have a meaningful connotation only in terms of the associated physiological and functional hazards (Mukhopadhyay, 2011). Biomedical literature shows that physiological and functional risks increase multiplicatively as the nutritional shortfall increases further below the cut-off (Scrimshaw *et al*., 1968; Pelletier *et al*., 1994).

The anthropometric measure that we consider in this paper is height-for-age percentage of median (henceforth hap), which is defined as the ratio of the measured height of a child to the median height of the reference population of children for the same sex and age (O'Donnell *et al*., 2008). The reason for using height for age scores as a measure of child nutrition is that it captures the long term nutritional status of a child, right from conception to date. The alternatives would be to use the weight for height or weight for age scores. While the former is an extremely volatile measure, the latter is a summary measure, mainly used by international agencies to make inter-temporal or cross country comparisons (Svedberg, 2002). Though the earlier studies on child nutrition typically used the hap scores (Barrera, 1990; Thomas *et al*., 1991), the standard practice now is to use the indicator of height for age z-score (defined as the difference between the height of a child and the median height of the reference population of the same sex and age, divided by the standard deviation of the reference population). It is considered to be superior to the hap score, since the latter is not standardized for the dispersion in the reference population (O'Donnell *et al*., 2008). However, the z-scores are negative for a considerable part of the distribution while the General Entropy Class of inequality measures are applicable only to positive real values (Deaton, 1997). Previous studies by Pradhan *et al*. (2003) and Omilola (2010) that have decomposed nutritional inequalities applying the General Entropy Class of inequality measures have transformed the anthropometric z-scores to positive numbers by arbitrarily adding a constant greater than the negative value of the smallest z-score to each z-score. However, this procedure is incorrect, given that the inequality measures of the General Entropy Class do not satisfy translation invariance. Moreover, Omilola (2010) admits that this procedure introduces 'a small bias to the results'. To overcome this limitation we use the indicator of hap score that assumes positive real values throughout the distribution.

4. Results and Discussion:

Table 1 provides the values of the General Entropy Class of Inequality Measures (for c =0, 1 and 2) for the overall population and for each of the relevant sub-groups. We note that the level of inequality is systematically higher among the disadvantaged groups, irrespective of the grouping parameter. To wit, inequality is higher among the poor compared to the non-poor and among the backward castes compared to the other castes. This pattern is consistent even when we consider intersections across the social spectrum. For instance, just as inequality is higher among poor SCs compared to poor Others, the former also have higher inequality compared to non-poor SCs. This hints towards the existence of a sub-section of the disadvantaged groups of children that have relatively better nutritional outcomes.

In Section 1, we highlighted the sensitivity of the traditional method of inequality decomposition to the number and relative composition of groups, using the example of nutritional inequality across economic class. Applying the method of inequality decomposition proposed by Elbers *et al*. (2008), we find that the difference in the 'between group' component is not as sharp when we change the number of stratifications. To wit, the 'between class' component explains 4% and 6% of total inequality when we consider two and five strata of children respectively according to the level of household wealth. Not only with respect to the number of stratifications, the corrected method of decomposition is also normalised for the relative composition of groups. According to the corrected method, the 'between class' component explains 8.3% and 6.3% of total inequality respectively in Kerala and Madhya Pradesh.

Table 2 provides the results of decomposition of total inequality into 'between group' and 'within group' components for each grouping parameter, following the traditional method. Consistent with previous studies that have carried out the decomposition exercise, we find that the share of the 'between group' component is consistently much lower than the 'within group' component. With 2.3% and 1.8% of total inequality being explained respectively by economic class and caste, our findings corroborate those of previous literature pointing out that class inequality dominates caste inequality in child nutrition in India (Mukhopadhyay, 2015). The central question of this paper asks if a greater share of total inequality is explained by the 'between group' component, when we consider intersectional groups across multiple axes of social power. The traditional method of inequality decomposition answers in the affirmative, with 3.6% of total inequality explained by the intersectional (across caste and class) inter-group component. However, as explained in Section 3.2 the, decompositions across alternative grouping parameters, wielding the traditional method are not comparable since the method is sensitive to the number and relative sizes of groups. Thus, the traditional framework is methodologically inept to delineate the contributions of 'between group' inequality across alternative grouping parameters.

We thus carry out the decomposition exercise following Elbers *et al* (2008) such that the decompositions are comparable across alternative partitioning of the population. Table 3 illustrates that the population shares and nutritional shares are equal for the counterfactual groups constructed for economic class, caste and economic class-caste intersections. Table 4 shows that the share of 'between class' inequality rises to above 4% of total inequality. With the share of 'between caste' inequality rising to a bit more than 2%, class inequality still dominates caste inequality. However, though the share of the 'between group' component rises (compared to the traditional analysis) when we consider stratifications along caste and economic class, inter-group intersectional inequality is now dominated by inter-class inequality. This means that the stark disparity in nutritional outcomes across the single axis of class is to a certain extent assuaged when we consider stratifications across the social spectrum. Intersectionality literature, particularly in the context of health outcomes, has shown that while outcomes differ starkly between groups at the extreme, stratification along multiple axes of social power often reveal groups in the middle leveraging advantages from certain advantageous identities (Sen and Iyer, 2012). That is, while there is a sharp disparity in the outcomes between children from poor backward caste households and those from non-poor upper caste households, the middle groups comprise children from non-poor backward caste households and those from poor upper caste households. While the former leverages benefits from their class identity, sufferings stemming from the class identity might be mitigated, to varying extents, by benefits obtained from the caste identity for the latter.

We repeat the same exercise for rural and urban areas to see if there are regional variations in the composition of inequality across the axes of class and caste and their intersections. Table 5 shows that the all-India pattern of a higher 'between class' share (as compared to the 'between caste' share) is replicated in rural India. However, in urban India, the 'between class' share exceeds the 'between caste' share. This holds with both the traditional and the corrected methods. Again, when we consider class-caste intersections in rural India, by the traditional method, the 'between group' share exceeds both 'between class' and 'between caste' shares. Nevertheless, similar to our findings from the analysis of all-India data, the corrected method shows that the share of intersectional inequality in total inequality is less than the share of 'between class' inequality in rural India. Interestingly, this pattern is reversed in urban India, where both by traditional and corrected methods, the share of intersectional inequality exceeds both the shares of inter-class and inter-caste inequalities in total inequality.

5. Conclusion

This paper discusses a method to cull out the contribution of inter-group intersectional inequality in total inequality. We analyse nutritional inequalities and show that the traditional method of inequality decomposition fails to uncover the actual salience of alternative groupings. Again, if total inequality is appropriately decomposed, the share of the 'between group' component may not necessarily increase when we consider stratifications along multiple dimensions of social power. Using the approach proposed in this paper, one can also make intertemporal comparisons of inter-group intersectional inequality. Given the well-documented importance of the framework of intersectionality in analysing inequality, the decomposition exercise has important connotations for policy formulation.

One limitation of the decomposition exercise is that it does not allow testing if the differences in inter-group shares in total inequality are statistically significant. Studies using other quantitative methods to analyse intersectional inequalities corroborate our finding of regional variations in the salience of different kinds of inter-group inequality. For instance, Mukhopadhyay (2015) shows that class inequality dominates caste inequality and caste inequality dominates gender inequality in rural North India for all levels of child stunting. In contrast, caste inequality dominates class inequality which in turn dominates gender inequality for severe stunting among children in rural South India.

We end the paper on a cautionary note that irrespective of relative magnitudes and statistical significance, any disparity in well-being, that is systematically attributable to social identities such as caste and class, is normatively unacceptable. Kanbur (2006) has pointed out that to set a low policy priority on 'between group' inequality on the ground that its relative share in total inequality is low would be too naive. Even if a miniscule proportion of total inequality is explained by the 'between group' component, the difference between the group means is itself a matter of concern and may even lead to a disruption of social stability and racial harmony (Kanbur, 2006).

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Table 1: Population Share, Nutrition Share and Inequality in Different Sub-Groups of the Population of Children below Five Years in India

Grouping Parameter	Sub-Group	Population Share (%)	Share in Nutrition	GE(0)	GE(1)	GE(2)
Economic Class	Poor	26.19	25.74	0.00242	0.00243	0.00244
	Non-Poor	73.81	74.26	0.00208	0.00208	0.00208
Caste	SC	24.40	24.20	0.00226	0.00226	0.00227
	ST	10.44	10.30	0.00254	0.00256	0.00258
	OBC	44.08	44.10	0.00216	0.00216	0.00217
	Others	21.08	21.42	0.00196	0.00195	0.00195
Caste-Class Intersection	Poor SC	8.50	8.31	0.00240	0.00241	0.00242
	Non-Poor SC	15.90	15.80	0.00212	0.00212	0.00213
	Poor ST	6.13	5.91	0.00270	0.00272	0.00275
	Non-Poor ST	4.31	4.30	0.00226	0.00227	0.00228
	Poor OBC	9.70	9.51	0.00233	0.00234	0.00236
	Non-Poor OBC	34.39	34.50	0.00206	0.00206	0.00207
	Poor Others	1.87	1.81	0.00193	0.00193	0.00193
	Non-Poor Others	19.20	19.60	0.00192	0.00191	0.00191
Total Population		100	100	0.00222	0.00222	0.00223

Source: Authors' Calculations from NFHS-3 Unit-Level Data

Table 2: Share of 'Between-Group' and 'Within-Group' Components in Total Inequality by the Traditional Method of Decomposition

Grouping Parameter	Between Group			Within Group		
	GE(0)	GE(1)	GE(2)	GE(0)	GE(1)	GE(2)
Economic Class	0.00005 (2.25%)	0.00005 (2.25%)	0.00005 (2.25%)	0.00217 (97.75%)	0.00217 (97.75%)	0.00217 (97.75%)
Caste	0.00004 (1.80%)	0.00004 (1.80%)	0.00004 (1.80%)	0.00218 (98.20%)	0.00218 (98.20%)	0.00218 (98.20%)
Caste-Class Intersection	0.00008 (3.60%)	0.00008 (3.60%)	0.00008 (3.60%)	0.00214 (96.40%)	0.00214 (96.40%)	0.00214 (96.40%)

Source: Authors' Calculations from NFHS-3 Unit-Level Data

Table 3: Population Share and Nutrition Share of the Counterfactual Groups corresponding to Economic Class, Caste and Caste-Class Intersections

Counterfactual Distribution	Sub-Group	Population Share (%)	Share in Nutrition
Economic Class	Group 1	26.19	26.19
	Group2	73.81	73.81
Caste	Group 1	24.40	24.40
	Group2	10.44	10.44
	Group 3	44.08	44.08
	Group 4	21.08	21.08
Caste-Class Intersection	Group 1	8.50	8.50
	Group2	15.90	15.90
	Group 3	6.13	6.13
	Group 4	4.31	4.31
	Group 5	9.70	9.70
	Group 6	34.39	34.39
	Group 7	1.87	1.87
	Group 8	19.20	19.20
Total Population		100	100

Table 4: Share of 'Between-Group' Component in Total Inequality by the Corrected Method of Decomposition (Elbers *et al*. 2008)

Grouping Parameter	Maximum 'Between Group' Inequality			Share of 'Between Group' Component		
	GE(0)	GE(1)	GE(2)	GE(0)	GE(1)	GE(2)
Economic Class	0.00121	0.00119	0.00117	0.00005 (4.13%)	0.00005 (4.20%)	0.00005 (4.27%)
Caste	0.00190	0.00190	0.00189	0.00004 (2.11%)	0.00004 (2.11%)	0.00004 (2.12%)
Caste-Class Intersection	0.00200	0.00199	0.00199	0.00008 (4.00%)	0.00008 (4.02%)	0.00008 (4.02%)

Source: Authors' Calculations from NFHS-3 Unit-Level Data

Table 5: Percentage Share of 'Between-Group' Component in Total Inequality in Urban and Rural India According to Traditional (T) and Corrected (C) Methods

Grouping Parameter	Rural						Urban					
	GE(0)		GE(1)		GE(2)		GE(0)		GE(1)		GE(2)	
	T	C	T	C	T	C	T	C	T	C	T	C
Economic Class	1.81	3.54	1.80	3.64	1.80	3.70	0.94	2.74	0.94	2.82	0.94	2.90
Caste	1.36	1.72	1.35	1.74	1.35	1.76	1.88	3.73	1.89	3.85	1.89	3.92
Caste-Class Intersection	2.72	3.35	2.70	3.49	2.70	3.41	2.82	5.46	2.83	5.56	2.83	5.71