Determinants of Income Inequalities and multidimensional Poverty among SC/STs in Andhra Pradesh: Micro-level Evidence

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Abstract: *This study investigates income inequalities and multidimensional poverty among Scheduled Castes and Scheduled Tribes in persisting in all districts of rural Andhra Pradesh (AP).Income inequalities in all districts of Andhra Pradesh calculated using three alternative measures of inequality viz, Gini coefficient, Theil's entropy measure and the squared coefficient of variation.Multidimensional poverty Index (MPI) is measured in the dimensions of health, education, living standard and household environment using eight indicators and Alkire-Foster methodology. Particularly in India including Andhra Pradesh caste-based exclusion and discrimination continues to be one of the main reasons for their high income inequalities and higher deprivation with multidimensional poverty.The study revealed that the all districts of Andhra Pradesh as a whole high income inequalities, economic exclusion among SC/STS with large incidence of poverty. These disadvantaged groups (SC/STs)faced discrimination in hiring for employment, access to finance, access to market demand professional skills, access to education*

Keywords: *Income Inequalities and multidimensional poverty, discrimination, Economic exclusion, low wage payments, caste-based exclusion, disadvantaged groups*
JEL Classifications: A 20; D 63; E 24

I. Introduction

In modern globalised world Dr. B R Ambedkar's words giving more important and significant that graded inequality prevents the rise of general discontent against inequity and will never lead to revolution for social justice (PIB, 2015). Current situation of India revels that Scheduled Castes and Tribes constitute that half of the total poor with socio-economic deprived households living in Below Poverty(Indian Express, 2015). The recent socio economic survey also showed that the majority of the SC/STs had been in doubly disadvantaged in socio-economic and political deprived since the decades (Neera Chandhoke, 2015).

. Social inequalities abound with historically denied opportunities to lower social groups are deeply rooted in caste system in India for generations (Thorat and Newman, 2007; Jodhka and Shah, 2010). Caste is an important social institution that largely determines the social fabric of the Indian society. Socially disadvantaged groups have historically been subjected to various forms of discrimination in the society and in the labour market (Deshpande and Newman, 2007; Jodhka and Newman, 2007). As a result, economic discriminations are evident in accessing jobs, even with the same level of education and skill set those posses, primarily because of social intolerance and prejudices. This resulted in differences in the income and endowments between the disadvantaged social groups and the others (Madheswaran and Attewell, 2007; Haan and Dubey, 2005). The exclusionary approach continued even after independence despite the fact that there has been a huge awakening in political processes and affirmative action has been initiated in the policy domain. This shows an embedded prejudice and denial of social justice to the marginalized social groups. It is strongly argued that affirmative action and institutional mechanism are vital to correct bias and prejudice in order to weaken the economic and social disparities (Ghosh, 2006).

The role of globalization and technological progress in driving inequality are broadly in line with the findings in the literature. In particular, trade openness is associated with lower inequality (albeit not in a statistically significant way), while greater financial openness and technological progress are associated with rising income inequality, likely reflecting the fact these disproportionately benefit high-tech and labor-skilled sectors (Era Dabla-Norris K. K., 2015)

Globlisation, librlisaiton and privatization has not helped for disadvantaged excluded (SC/ST) groups to come out of poverty, socio-economic deprivations, but it has increased more earning income gaps and income inequality among higher caste and SC/STs in India(Gillette Hall and Harry Patrinos, 2010). After scenario of globalization, liberalization India had the reforms in India ability to pursue economic reforms depends not only on the ability of the government to co-opt various economic classes especially those that are largely disadvantaged, but also on the distribution of the gains of these reforms across castes and religions(UNO

Report, 2010). Today's capitalism pits disadvantaged groups against each other, and the consolidation of identities helps fragment the oppressed. India is still divided over various sociological planks like religious differences, upper and lower caste divergence and patriarchal mind set, still prevalent in this world of EQUALITY,(Insights, 2015)

This research paper will analyse the real situation in deeply with causes and consequences for income inequalities and multidimensional poverty among SC/STs and other in Andhra Pradesh. In this context, the researcher attempts to analyze the income inequalities and multidimensional poverty across districts of Andhra Pradesh. There is a huge income inequality disparity and multidimensional poverty that has had profound implications on the well-being of the population in the backward districts in relatively less developed districts.

II. Current Status of SC/STs in Andhra Pradesh

According to 2011 Census Scheduled Castes and Scheduled Tribes in Andhra Pradesh has a sizeable important remarkable population. There were 8,445,398 and 2,631,145 SCs and STs respectively comprising 17% and 5% percent of the total population of Andhra Pradesh. There are about 59 Schedule castes in A.P of which the important ones are Mala, Madiga, Relli, Adi Andhra and others. Similarly there are 35 Scheduled Tribes and the important among them are Gonds, Koyas, KondaReddies, Savaras and others. The lambadis are the single largest tribal group and constitute about 40 percent of the ST population in the State. While the SCs are distributed throughout the state, the STs are concentrated in the hilly forest areas of Srikakulam, Vizianagaram, Visakhapatnam, East Godavari, and West Godavari. T he SC and ST population in A.P. are spread across all the districts but there are some districts where these are concentrated. The SC population is highest in East Godavari and Guntur with 11% of the SCs in this district alone. Vizianagaram district has the least concentration of SCs at 2%. The ST population is highest in Visakhapatnam with 23% of the STs in this district alone. YSR Kadapa district have the least concentration of STs at 2% (AP SERP Report, 2014)

2.1 Characteristics of Income Poverty in Andhra Pradesh

The state of Andhra Pradesh economy, as measured by growth in the real Gross State Domestic Product (GSDP) has been witnessing a strong growth phase since 2004-05. The advance estimates represent a growth rate of 5.29% during 2012-13 and the corresponding. As per the provisional estimates of 2013-14, the Per Capita Income (PCI) of Andhra Pradesh at current prices increased to Rs.85, 797 from Rs.76, 041 in 2013-13 registering a growth of 12.8%. The Per Capita Income (PCI) at constant (2004-05) prices, has also gone up from Rs.42, 186 in 2013-13 to Rs.44, 481 in 2013-14, a growth rate of 5.4%.(AP SERP Report, 2014)

Figure1.1 Bottom Mandals in AP
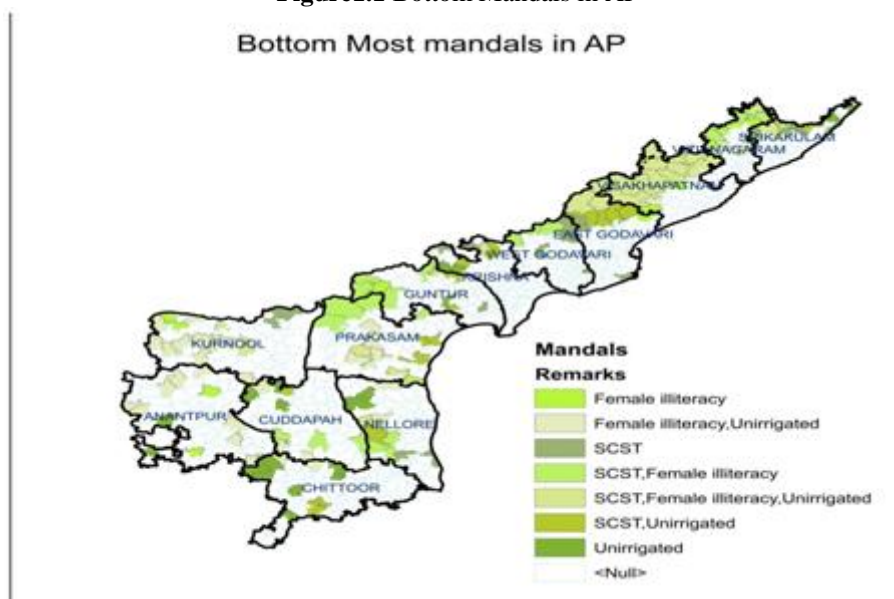
Source: Andhra Pradesh Inclusive report, 2014

2.3 Vulnerable Groups

The proportion of people below poverty line is also not same for all social groups and economic categories in India. Social groups which are most vulnerable to poverty are scheduled caste andscheduled tribe

households. Similarly, among the economic groups, the most vulnerable groups are the rural agricultural labour households and the urban casual labour households (Panagriya Arvind and Vishal, 2014)

Figure1.2 Poverty in India 2011-12: Most Vulnerable Groups
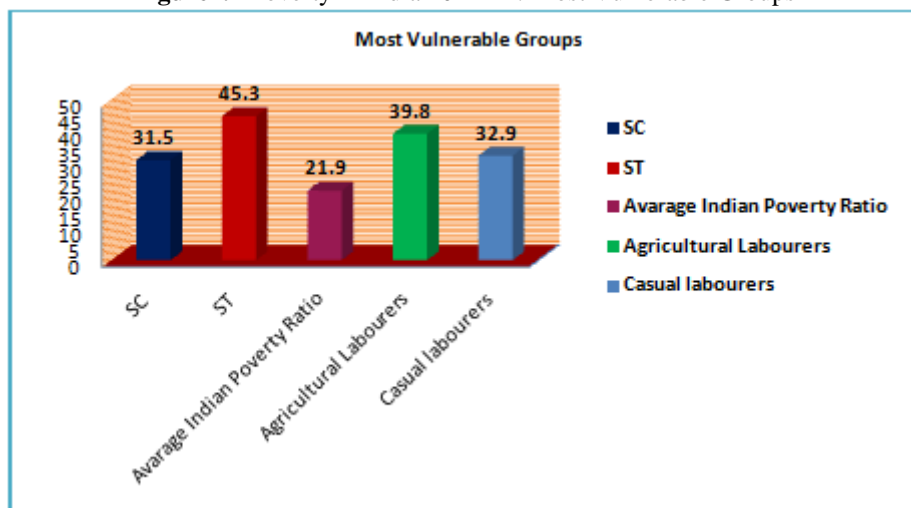
Social groups and economic categories Source: Panagriya Arvind and Vishal

The following Figure 1.2 shows the percentage of poor people in all these groups. Although the average for people below poverty line for all groups in India is 30, 48 out of 100 people belonging to scheduled tribes in rural areas are not able to meet their basic needs. Similarly, 47 per cent of casual workers in urban areas are below poverty line. About 50 per cent of landless agricultural workers and 43 per cent of scheduled castes are also poor (Panagriya Arvind, 2013).

III.   Literature Review

Rajendra P.Mamgain(2015) indicates that the Scheduled Castes (SCs) and Scheduled Tribes (STs) in the post-2015 development paradigm who lag much behind other social groups in the attainment of most of the Millennium Development Goals (MDGs). It situates existing inequality among various social groups with the critical issues of social exclusion-induced discrimination, human poverty and inequality in societies afflicted by such discrimination. The implications of Indian development policies are not researched to real needed people, but rising inequalities for SCs and STs. A large proportion of the SCs and STs are not able to partake of their share in the 'shining' sectors, those characterized by high growth of India, which employ about 31 per cent of all workers. Only 5.2 per cent of the total SC–ST workers are benefitting from this 'shining' part of India.

B.P. Mahesh chandra guru, (2015)concluded that empirical studies have revealed that most of these programmes are not implemented properly in the country due to lack of participation of beneficiaries and absence of pro-active role of government in the empowerment of Dalits. The social activists and intellectuals have strongly advocated a paradigm shift from post-facto to pro-active planning for the empowerment of SC/ST.

Guruet.al.(2015)argue:"Fromtheverydawnofheindependence,thegovernmentshavebeentakingcertainrem edialstepsfortheupliftmentofthesocio-economicstatusof ScheduledCastes/ScheduledTribesinIndia.Thestatehasputinplacelaws,policiesandprogrammeswithoutwhichevent hemodestprogressintheoverallsituationwouldnothavebeenpossible.However,thesewelfaremeasuresarequiteinade quateandhavetobe moreeffectivelyimplementedinordertoenabletheScheduledCastes/ScheduledTribestoovercomethecontinuedsub ordination,exclusionandexploitationinIndiasociety".

S. Subramanian1 and D. Jayaraj(2015)research results showed that SC/STs group is relatively

disadvantaged, and the Others group is advantaged, in each of the years 1983 and 2009-10, and in both the rural and the urban areas of the country. Furthermore, while the income-share to population- share ratio improves from 1983 to 2009-10 for both groups in the rural areas, it actually deteriorates for the SCST group and improves for the others group in urban India. Indian has indeed been a country of widening economic inequality, with little evidence of either inter-personal or inter-caste inclusiveness in growth.

Vikas Rawal and Madhura Swaminathan(2014)research analysis shows that Dalit households were under-represented in the top income quintile in all villages but one, and over-represented in the lower quintiles. The frequency distribution of incomes for Dalits versus Other Social Groups revealed distinct non-overlapping segments. Thirdly, the contribution of between-group inequality to total inequality ranged from 1 to 14 per cent

using the conventional decomposition of GE(2). However, using the ELMO method, between-group inequality was more than 50 per cent of its maximum value in three villages.

Mariswamyet.al.(2013)amplify:
"Socialactivistsandintellectualshavestronglyadvocatedaparadigmshiftfrompost-factotopro-activeplanningfortheempowermentofScheduledCastes/ScheduledTribes.The12thplanproposesasetofkeyimplementationmeasurestoempowertheScheduledCastes/ScheduledTribessuchasearmarkingofSCSPfundsfromthetotalplanoutlayswellinadvanceofthecommencementofthefinancialyear,preparationofpro-activeplanningdocumentsassub-plans,anappraisalandapprovalmechanismforthesub-planssoformulatedandarobustmechanismformonitoringandevaluationofoutcomes.Atthestatelevelanapexbodyheadedbythe ChiefMinisterwillappraisethesubplanforthedevelopmentofScheduledCastes/ScheduledTribesinthestatesconcern.TheMinistryofSocialJusticeandEmpowermentisrequiredtomonitortheprogressandensurestrictimplementationofvariousspecialprovisionsforScheduledCastes".

M H Suryanarayana(2013) results indicates that the SCs continue to remain relatively backward even after five decades of targeted efforts at their development. The incidence of illiteracy among the SCs is more than that in Other Social Groups. Their endowment of physical capital is also limited. Majority of the SCs is landless agricultural labourers and is poor. The available limited evidence, however, do not provide any firm evidence in support of the hypothesis about land endowment promoting economic security and empowerment of the SCs. This could be because of lack of complementary factors like capital, both human and physical. There is a need for concerted efforts at improving the asset-base and human capital endowment of the SC households.

IV.   Objective of the study
1)   To review the SC/STs socio-economic and political policy conditions
2)   To examine the political vulnerability and income inequality among the SC/STs
3)   To assess the income inequality among the SC/STs in terms of education, employment, income and districts of Andhra Pradesh.
4)   Comparisons are drawn between SCs, STs and other groups on the basis of the computed measures of poverty and inequality.
5)   To offer policy guidelines for combating political vulnerability and income inequality

V.   Methodology

5.1 Data Sources
This study based on secondary and primary data. Primary data was collected from a rural sample of 4550households drawn from 13 districts in a survey conducted between August and November 2015 better known as the benchmark socio-economic caste Census 2011 and socio-economic2014-15 survey of Andhra Pradesh. The unit of the survey was households in Andhra Pradesh districts. The total households are 4550 from all over districts of Andhra Pradesh, out of these households are 1300 SC households, 650 STs and 2600 others households, the total number of households are 4550.A multi-staged stratified systematic sampling design was used to create a sample from thirteen districts, representing individual from all constitutes, municipalities and village pancyaties in thirteen districts.

5.2 Measures of Income Inequality
Measuring Income inequalitiesamong SC/STs and other in selected districts of Andhra Pradesh are calculated using three alternative measures of income inequality viz, Gini coefficient, Theil's entropy measure and the squared coefficient of variation. They satisfy the three desirable properties of a measure of income inequality, viz., each measure is scale independent, population size independent and each follows the all important Pigou-Dalton condition the inequality measure should rise if income transfer occurs from a poorer to a richer person, relative ranking remaining the same.

This study uses the geometric definition or the trapezoidal rule for SC/STs and others of income income data to compute the Gini coefficient. It, can be derived from the general formula for grouped data given by,

$$G = \frac{1}{2} \sum_{i=1}^{n} \sum_{j=1}^{n} p_i \, p_j \left| \frac{y_i'}{p_i} - \frac{y_j'}{p_j} \right| \tag{3.2.1}$$

Where, y_i' is the income share of the ith income class only (not cumulative), p_i is the cumulative population proportion up to the ith income class i.e., proportion of persons with highest income of the ith class or less and n is the number of income classes. From formula (3.2.1), which uses the sum of weighted mutual differences, we can derive the trapezoidal rule (Kakwani, 1980) following some manipulation as

$$G = 1 - \sum_{i=1}^{n} p_i (Q_i + Q_{i-1}) \qquad (3.2.2)$$

where, Q_i is the cumulative income share up to the ith income class, definition of p_i being the same. To compute G, using (3.2.2), the data need to be arranged in ascending order of income classes. There are several alternative forms of computing G (Sen, 1973; Rao, 1981), but all these measures are equivalent to the geometric definition (Sudhir Anand, 1980). By considering differences of all possible pairs of income proportions, the Gini coefficient avoids the total concentration on differences with respect to the mean, which the variance (V) and coefficient of variation (C) cannot. In avoiding the ad hoc *squaring* procedure of C and V, the Gini coefficient is a more direct measure of inequality taking note of differences between every income pair.

The term *entropy* is borrowed from thermodynamics. Entropy, in thermodynamics, implies increasing disorder. But here *entropy* is used to imply reduction in inequality rather than its converse. Theil goes on to define entropy as the expected information content in a particular situation. It implies the weighted average of information content of a situation where the weights are the respective probabilities. But apart from borrowing the term, Theil's entropy measure of income inequality has hardly anything to do with the principles of thermodynamics. If $H(x)$ denotes entropy, $h_i(x_i)$ the information content in the ith situation and x_i the probability that the ith situation will occur, then

$$H(x) = \sum_{i=1}^{n} x_i h_i(x_i) \qquad (3.2.3)$$

It has been assumed that $h_i(x_i) = \log \dfrac{1}{x_i}$. In other words, the more unlikely the event, the greater must be the information content of the situation. It implies that lower is the probability that the ith event will occur the higher the information content of the situation. Considering the ideal situation where probabilities of occurrence of all events are the same,

i.e., $x_i = \dfrac{1}{n}$, Theil's measure is expressed as

$$T = \log n - H(x)$$

$$= \sum_{i=1}^{n} x_i \log n x_i \qquad (3.2.4)$$

Obviously, $\sum_{i=1}^{n} x_i = 1$. But for grouped income data, the following form is used to compute T.

$$T = \left\{ \sum_{i=1}^{n} \left(\frac{Y_i}{Y} \right) T_i \right\} + \left\{ \sum_{i=1}^{n} \left(\frac{Y_i}{Y} \right) \log (Y_i / Y)(n_i / n) \right\} \qquad (3.2.5)$$

where Y_i denotes the mean income of the ith class, Y the mean of the entire population and T_i's are to be calculated for each class separately. The first term reflects the within SC/STs income inequality, while the second term captures the between SC/STs income inequality. However, most studies use Theil's index to compute only the second term in (3.2.5).

The most rudimentary measure of income inequalityvariance satisfies the Pigou-Dalton condition. But to get a clearer picture of relative variation we consider the squared coefficient of variation. It is simply $C^2 = \dfrac{V}{\mu^2}$, where V denotes the squared variance of SC/STs income data and μ is the mean income of the population. However, a major drawback of C ^{2} is that it attaches equal weights to income transfers from any level to all other income levels.

Both the coefficient of variation and the Gini coefficient satisfy the Pigou-Dalton condition, which requires that an income transfer from a richer person to a poorer person must reduce the value of the inequality measure. The coefficient of variation is equally sensitive at all income levels. But the sensitivity of Gini coefficient depends not on the size of income levels but on the number of people in between them. Sen (1973) provides a remarkable interpretation of the ungrouped variant of the Gini coefficient as presented in (3.2.1). He writes: "In any pair-wise comparison the man with the lower income can be thought to be suffering from some

depression on finding his income to be lower. Let this depression be proportional to the difference in income. The sum total of all such depressions in all possible pair-wise comparisons takes us to the Gini coefficient".

5.3 Measures of Multidimensional poverty

Measurement of Multidimensional Poverty among SC/STs and others following identification of the dimensions and indicators, the weights assigned to each dimension and indicator are critical in multidimensional poverty. A large and growing literature on multidimensional poverty, multidimensional well-being, social exclusion and composite indices invariably used both continuous and dichotomous data and varying weighting structure (Chakravarty and D'Amborsio 2006; Jayaraj and Subramanian 2010; Mishra and Shukla 2015). Decancq and Lugo (2015) have systematically reviewed the merits and limitations of eight different approaches used in assigning weights to variables in composite/ multidimensional indices. We have followed Alkire and Foster's (2008; 2011) method of computing multidimensional poverty by assigning weights based on a normative approach, but we differ in fixing the cut-off point and indicators.We have assigned equal weight to each dimension and equal weight to variables within each dimension. Since there are four dimensions and eight indicators, the weight of each indicator is 1/8. The dual cut-off point used in identifying the poor in each indicator is shown in Table 1. The cut-off point for weighted deprivation is fixed at a value of 0.26 as it captures multidimensional poverty. Because we have four dimensions, a person will be poor in more than one dimension if and only if the weighted deprivation score is more than 0.25. A brief description of poverty Head-

Table.5.1 Dimensions, Indicators and Weights used in the Computation of Multidimensional Poverty Index (MPI) in India

Sl.No	Dimensions	Description of Indicators	Weights	Mean	Std. Dve.
1	Education	School of Enrolment(V1): At least one child in the school going age(6-14 years) in the household currently not attending in school	0.125	0.062	0.240
		Years of Schooling(V2): No adult member(15 years and above) in the household has completed five years of schooling	0.125	0.138	0.345
2	Economic	Consumption Expenditure(V3): if the household falls below the consumption expenditure threshold limit (official poverty line)	0.125	0.212	0.409
		Employment(V4): any member in the household(15+) has not worked 183 days or more in the year preceding the survey	0.125	0.209	0.406
3	Health	Nutrition(V5): the household has any undernourished(BMI < 18.5) ever married women(15-49 Years	0.125	0.166	0.372
		Health Insurance(V6): the household does not have any health insurance	0.125	0.880	0.325
4	Household environment	Water(V7): the household does not have access improved drinking water	0.125	0.111	0.314
		Sanitation(V8): the household does not have access to improved sanitation	0.124	0.633	0.482

where w_i is the weight of ith indicator and CH_i is the censored headcount ratio of ith indicator. The contribution of each district to overall poverty is computed by using the following formula:

$$\text{Contribution of household i to MPI} = \frac{\frac{n_i}{n}MPI_i}{MPI_{total\ sample\ population}} * 100$$

Where n_i is the population of ith sample households and n is the total population. MPI_i is the MPI of the ith household. We have also estimated multidimensional poverty using an alternative approach – the Jayaraj and Subramanian (2010) method, which is an extension of the Chakravarty and D'Ambrosio (2006) method. The Jayaraj and Subramanian formulation is given as

$$\prod \propto = \sum_{J=1}^{k} \left(\frac{J}{K}\right)^{\propto} * H_J$$

Where H_j is the proportion of population that is deprived in exactly j dimensions (j=1,2,….K)

K is the number of dimensions

π is the family of multidimensional headcount indices and

π_0 is the proportion of population deprived in at least one dimensions and it reflects the union method of identifying poor.

The D-curve is specific combination of indices π_0 and π and can be obtained as M= π 1- π 0/2K.

The D curve is analogous to the way Gini index is derived from Lorenz Curve. These estimates are generated at the districts of Andhra Pradesh level and compared with our estimates. We prepared Andhra Pradesh district

maps of multidimensional poverty index using ArcGIS software package (ArcMap 10) to show the spatial variation of multidimensional poverty.

VI.   Results and Discussion

In recent years we can observe particularly rural India have been rising incomes inequalities are high among SC/STs. In this analyse income Inequalities can be measured by the Nominal Mean Income of the Sample, Nominal Mean Income of the Poor (Rs per person per annum). We are considering that if the value is 0 to near to 1 high income inequalities and if value is 1 less income inequalities.The mean income of the poor in normalised form indicates the proportion of the minimum basket of goods and services a typical poor can purchase if his income is equal to the mean income of the poor. We have begun to discuss about the research results by presenting an overall picture of the dimensions of income inequalities among SC/STs and other in Andhra Pradesh districts.

Table: 6. 1.   Estimated Mean Income among SC/ST and Others

Andhra Pradesh	Nominal Mean Income of the Sample (Rs per person per annum)			Nominal Mean Income of the Poor (Rs per person per annum)			Normalised Mean Income of the Poor [+]		
	SC	ST	Others	SC	ST	Others	SC	ST	Others
Anathapur 9	3256	1830	7152	1653	1490	1771	0.69	0.61	0.93
Kurnool 2	2373	1605	5271	1335	1235	1559	0.46	0.31	0.69
Chittoor 7	3214	1790	6771	1612	1412	1732	0.65	0.55	0.87
Nellore12	3518	1910	7615	1928	1688	1819	0.78	0.72	0.98
Kadapa10	3310	1852	7212	1683	1514	1797	0.71	0.66	0.95
Prakasam1	2120	1488	5444	1390	1370	1414	0.40	0.29	0.65
Guntur 3	2593	1665	5772	1370	1256	1574	0.48	0.37	0.75
Krishna 4	2759	1693	5982	1414	1294	1620	0.52	0.40	0.79
West Godavari 5	3019	1712	6257	1516	1349	1698	0.58	0.47	0.82
East Godavari13	3598	1943	7638	2017	1700	1836	0.84	0.76	0.99
Visakhapatnam11	3424	1891	7473	1912	1679	1810	0.75	0.69	0.97
Vijayanagaram 8	3238	1821	7111	1629	1452	1762	0.66	0.57	0.91
Srikakulam 6	3167	1767	6573	1569	1379	1712	0.62	0.51	0.85

* Sample size is too small.[+] Mean income is expressed as percentage of respective poverty line.

The above table 6.1 indicates that mean income per person (nominal per capita) in the entire sample as also the mean income (nominal as well as normalised) of the poor separately, across the thirteen selected districts of Andhra Pradesh. The estimates for social groups SCs, STs and others are also presented. On an average and taking into account population size, income inequality increased 15 percent in among ST/STs and Others (Upper Castes). A substantial majority of households in these districts more than 85 percent of the SC/STS live in a society where income is more unequally distributed than in Andhra Pradesh. Although income inequality among SC/STs and Others (Upper Castes) across households has risen in Andhra Pradesh, these research analysis clearly estimates show that it has fallen for the Andhra Pradesh as a whole as the average incomes of SC/STs and Others (Upper Castes) in A.P districts have been converging. Income inequality is also a serious issue in Andhra Pradesh.

The per capita incomes of SCs and STs are lower vis-à-vis other social groups in all districts of Andhra Pradesh. In particular, the gap in per capita income between SC/STs and non-SC/STs seems largesome of the districts (in terms of per capita income) like East Godavari have less income inequalities with nominal mean income values are 0 to 1 for SC:0.84, STs: 0.76 and Others: 0.99, as follow Visakhapatnam, Nellore and Vijanagarm. Further, it is clear from the above table significantly showed Prakasam district have large vation of normalised income of the poor of SC 0.40 , STs: 0.29 and others 0.65, Kurnool for 0.46, STs: 0.31 and other 0.69, Guntur SC:048, ST: 0.37 and others 0.75, Krishna SC: 0.52, 0.40, 0.79, Vijayanagaram SC: 0.66, ST: 0.57, and others 0.91, Anathapur SC: 0.69, ST: 0.61 and others 0.93, Kadapa SC:0.71, ST: 066 and others 0.95. The general impression is that the per capita income of non-SC/STs is higher relative to SC/STs in all the districts of Andhra Pradesh.

We found that STs dominate over SCs in per capita income in rural Andhra Pradesh.Among the SC/STs income inequality appears marginal between all others (Upper Castes across all districts of Andhra Pradesh. This suggests that income inequalities in Andhra Pradesh are more pronounced among those lying above the line of poverty than among those lying below the line. We observed, inter-districts observed that the normalised per capita income among SC/STS shows minimum variation across in all Districts.

Table: 6.3 Estimated Income Inequality among SC/STs and other in A.P Districts 2015

Andhra Pradesh districts	Gini Coefficient			Theil's Entropy Measure			C^2		
	SC	ST	Others	SC	ST	Others	SC	ST	Others
Anathapur 9	0.3243	0.3030	0.4328	0.1728	0.1464	0.3222	0.3898	0.3051	0.7489
Kurnool 2	0.4618	0.4092	0.5832	0.3699	0.2864	0.4283	0.3803	0.3627	0.8527
Chittoor 7	0.3747	0.4748	0.4663	0.2291	0.4422	0.3787	0.5242	1.3890	0.8466
Nellore12	0.3613	0.4079	0.6114	0.3811	0.2861	0.4260	0.6948	0.8448	0.6474
Kadapa10	0.4064	0.3625	0.4121	0.3008	0.2325	0.2889	0.8227	0.5983	0.6734
Prakasam1	0.4740	0.3984	0.5765	0.3434	0.2663	0.4039	0.3519	0.3428	0.8231
Guntur 3	0.4500	0.3482	0.4147	0.2896	0.2454	0.2921	0.6387	0.5642	0.6120
Krishna 4	0.4430	0.3932	0.4269	0.2665	0.2782	0.3063	0.6605	0.6890	0.6939
West Godavari 5	0.4291	0.3385	0.3493	0.2723	0.1988	0.2068	0.7746	0.4675	0.4966
East Godavari13	0.3896	0.4191	0.4296	0.2619	0.3071	0.3136	0.6556	0.7856	0.7186
Visakhapatnam11	0.3246	0.3214	0.3247	0.2421	0.2515	0.2823	0.3522	0.4214	0.4212
Vijayanagaram 8	0.4002	0.2812	0.4142	0.3342	0.2212	0.2312	0.3441	0.4423	0.3611
Srikakulam 6	0.4121	0.3731	0.3947	0.3156	0.2461	0.3268	0.6231	0.3323	0.6893

Source: Researcher Calculation

Table 6.3 presents the income inequality measures estimated for inter-districts of Rural Andhra Pradesh.The research analysis emerges from the income inequality estimates. The distribution of income inequalities for all districts of Andhra Pradesh appears with Gini coefficient valuesfor Prakasam district shows that SC 0.4740, ST: 0.3984 and Others 0.5765, Kurnool SC0.4918, ST 0.4092 and others 0.5832 as follows Guntur and Krishna are high income variations among SC/STs and others with in Andhra Pradesh districts.

We found that the majority of sample respondent's inter-districts of Andhra Pradeshhousehold belonging to SC/STs have huge income inequalities than others. The others exhibit more unequal distribution of income than SC/STs in most districts. Actually, those belonging to SCs and STs have a lower per capita income, while among others (upper caste) are rich households leading to greater income inequality. Whereas others inter-districts clearly showed that among SCs and STs Income distribution is more income unequal of other(upper castes) in Kadapa, Anathapur, Chittoor and Nellore districts of Andhra Pradesh.

Multidimensional Poverty in districts of Andhra Pradesh
Table: 6.4: Comparison of Headcount Ratio (H), Intensity of Poverty (A) and Multidimensional Poverty (M0) with the Estimates provided by Jayraj and Subramanian and by Alkire and Seth at the District level in Andhra Pradesh

Estimates based on Alkire and Foster method 2011-12			Estimates based n Jayaraj and Subramanian method 2011-12							Alkire and Seth,2006		
A.P Districts	H (%)	A (%)	MPI	Poor in any dimensions π_0	Poor in any dimensions Poor in 1+dimension π_1	Poor in 2+ dimension π_2	Poor in 3+ dimension π_3	Poor in 4 dimension π_5	M(area above D-curve)	H (%)	A (%)	MPI
Anathapur9	36.6	43.0	0.153	0.664	0.500	0.306	0.204	0.256	0.443	45.6	36.3	0.261
Kurnool 2	57.0	47.8	0.281	0.985	0.681	0.556	0.378	0.462	0.574	56.7	57.8	0.316
Chittoor 7	42.8	43.8	0.198	0.716	0.546	0.342	0.230	0.299	0.490	48.8	47.6	0.283
Nellore12	30.4	40.9	0.127	0.473	0.447	0.245	0.159	0.218	0.422	42.4	30.7	0.156
Kadapa10	34.7	42.1	0.146	0.569	0.477	0.280	0.189	0.240	0.422	44.3	35.6	0.185
Prakasam1	60.6	48.6	0.295	0.999	0.698	0.596	0.392	0.478	0.593	58.7	62.6	0.319
Guntur 3	55.8	47.6	0.266	0.978	0.588	0.402	0.303	0.344	0.538	54.5	56.1	0.313
Krishna 4	53.7	45.7	0.251	0.748	0.571	0.397	0.298	0.340	0.524	53.2	52.4	0.309
West Godavari 5	49.4	45.3	0.224	0.734	0.568	0.377	0.276	0.318	0.511	52.5	51.8	0.304
East Godavari13	25.8	38.0	0.118	0.467	0.430	0.233	0.143	0.214	0.415	38.5	28.6	0.136
Visakhapatnam11	33.3	41.6	0.140	.550	0.463	0.260	0.169	0.222	0.431	43.2	33.9	0.167
Vijayanagaram8	37.2	43.3	0.171	0.711	0.531	0.324	0.219	0.293	0.460	46.8	37.5	0.273
Srikakulam 6	44.6	44.7	0.200	.720	0.551	0.365	0.243	0.312	0.509	50.9	48.6	0.292
Andhra Pradesh	41.7	43.5	0.174	0.951	0.517	0.327	0.212	0.138	0.465	46.5	49.7	0.241

Sources: Researcher calculation

Table 6.4shows that estimates of poverty at districts level of Andhra Pradesh using the Alkire and Foster method, the Jayaraj and Subramanian (2010) and the Alkire and Seth approaches. Multidimensional poverty at districts level (using the Alkire and Foster method) was 41.7% and close to the estimates as model of

Alkire and Seth (2015) (46.5%). The MPI reflects both the incidence and headcount ratio (*H*) of poverty the proportion of the population that is multidimensional poor – and the average intensity (*A*) of their poverty – the average proportion of indicators in which poor people are deprived. The MPI is calculated by multiplying the incidence of poverty by the average intensity across the poor (*H* × *A*). A person is identified as poor if he or she is deprived in at least one third of the weighted indicators. Those identified as 'Vulnerable to Poverty' are deprived in 20% – 33.33% of weighted indicators and those identified as in 'Severe Poverty' are deprived in 50% or more of the dimensions.The table provides estimates of multidimensional poverty are higher than the estimates of official consumption poverty provided by the Planning Commission, Government of India for the same period (Govt of India 2013). The average intensity among poor (A) is 43.5 indicating that on average; the poor are deprived in 43.5% of the weighted indicators. The *MPI* is the share of population that is multidimensional poverty adjusted by the intensity of deprivation. The *MPI* value of 0.19 indicates that the poor in the country experience 19% of the possible deprivations a society could experience. Among the bigger states of India (states with population of more than 10 million), our estimate of multidimensional= poverty was highest in Prakasam district (60.6%) followed by Kurnool (57.0%), Guntur (55.8%), Krishna (53.7%) and West Godavari (49.4%). In the other districts like Srikakulam (44.6%), Chittoor (42.8%) andVijayanagaram (37.2%) districts are having Multidimensional poverty withvariation in multidimensional poverty estimates was large, whereas other districts of Kadapa (34.7%), East Godavari (25.8%), Nellore (30.4%)and Visakhapatnam (33.3%) district medium of multidimensionalpoverty when compared with other districts. The lowest *MPI* value was observed in the Prakasam district with the MPI value of 0.309. The correlation coefficient of our estimates with Alkire-Foster estimates is 0.295 and the district patterns in multidimensional poverty remain similar in these costal districts estimates. However, the *MPI* value varied largely across the districts of Andhra Pradesh.

Table: 6.5A.1: Head Count Ratio (H), Intensity of Poverty (A), Multidimensional Poverty Index (MPI) and Decomposition of MPI Value district Level in Andhra Pradesh, 2004-05

Districts of Andhra Pradesh		Head count ratio(H)		Intensity of poverty		MPI		Rank of Districts by MPI	Contribution to MPI (%)	Share of population (%)	N
		H (%)	SE	A (%)	SE	MPI	SE				
Col 1	Col 2	Col 3	Col 4	Col 5	Col l6	Col 7	Col 8	Col 9	Col 10	Col 11	Col 12
	Andhra Pradesh	35.6	0.023	43.0	0.004	0.153	0.016	5	5.4	6.9	4940
1	Anathapur9	38.9	0.015	32.01	0.010	0.138	0.026	9	2.0	1.7	380
2	Kurnool 2	71.1	0.045	47.1	0.008	0.258	0.050	2	5.2	4.5	380
3	Chittoor7	52.6	0.021	37.4	0.002	0.142	0.032	7	2.8	2.4	380
4	Nellore 12	30.9	0.05	24.0	0.011	0.114	0.011	12	1.2	2.7	380
5	Kadapa 11	33.2	0.08	27.9	0.016	0.119	0.015	11	1.5	3.3	380
6	Prakasam1	76.2	0.048	49.2	0.009	0.279	0.068	1	6.5	5.3	380
7	Guntur 3	63.8	0.036	46.6	0.007	0.210	0.045	3	4.7	4.0	380
8	Krishna 4	59.8	0.028	42.9	0.005	0.200	0.041	4	4.1	3.5	380
9	West Godavari5	56.4	0.024	42.3	0.004	0.197	0.039	5	3.8	3.0	380
10	East Godavari10	36.4	0.10	30.00	0.011	0.126	0.020	10	1.8	1.6	380
11	Visakhapatnam13	30.5	0.04	20.9	0.012	0.110	0.016	13	1.0	2.5	380
12	Vijayanagaram8	49.5	0.018	35.4	0.001	0.135	0.029	8	2.4	2.0	380
13	Srikakulam6	54.6	0.02	41.1	0.003	0.15	0.035	6	3.3	2.7	380

		2		7				

Sources: Researcher Calculation

6.2 Poverty Estimates at the Regional Level

Table A.1 provides research results spread in 12 columns. It begins with the serial number of the Districts of Andhra Pradesh, the estimated headcount ratio, intensity of poverty, MPI, rank of districts by *MPI*, share of *MPI* in the district and sample size of the Andhra Pradesh. Standard errors are also reported along with *H*, *A* and *MPI*. The estimated headcount ratio varies poverty disparities between the districts, Prakasam district is the majority 76.2 per cent of sample respondents facing multidimensional poverty while Visakhapatnam is the lowest 30.5 per cent of the sample respondents when compare with other states and 71.1 per cent in Kurnool district, followed by 63.8 per cent, 59.8 per cent and 54.6 per cent of the sample respondents are facing high multidimensional poverty. Whereas other districts like Srikakulam with 54.6 per cent, Chittoor with 52.3 per cent, Vijayanagaram with 49.5 per cent and Anathapur 38.6 per cent are on average headcount ratio of multidimensional poverty. The headcount ratio ishuge disparities among the districts of Andhra Pradesh. For example, the headcount ratio in the state of Prakasam district ranges from 76.2 per cent in the Rayalaseem region to coastal region30.5 per cent of Visakhapatnam. The intensity of poverty was also high in Prakasam district 49.2 per cent. On the other hand, the intensity of poverty was low in Visakhapatnam 20.9 per cent of coastal region of Andhra Pradesh, where the multidimensional poverty was deprived in 37.5% of the MPIs total weighted deprivation score.

In Table A.1, column 7 provides the MPI values and column 9 provides the rank in MPI value among the districts of Andhra Pradesh. The MPI values vary from a low of 0.02 in Visakhapatnam to a high of 0.279 in the south coastalof Prakasam district. The variability in MPI values is also large in districts within the state. For example, in the case of Rayalaseem region of Kurnool MPI value is 0.258, with rank of 2 high multidimensional poverty ranks. The MPI values vary from 0.110 in the East coast district of Visakhapatnam (ranked13) to 0.138 in the southern Upper plain (ranked 9). The coefficient of variation in MPI in the districts of Andhra Pradesh was 53.4% indicating a large variation across regions. On ranking all the districts in ascending order, we found that districts in the state of Andhra Pradesh Prakasam district have a higher value of MPI and a high rank compared to the other districts. However, the coefficient of variation of the intensity of poverty was 7.3%, indicating low variability in the intensity of poverty across the districts of Andhra Pradesh state. In Andhra Pradesh, the coastal region contributes only 0.16% while it shares 2.5% of the total population. On the other hand, the inland central district contributes 1.14%, while it shares only 2.7% of the total population.

6.3 Decomposition of MPI by Regions

Decomposition of MPI by districts Columns 10 and 11 in Table A.1 give the contribution (in %) to the MPI and the population share of the different districts. We found that Prakasam district is home to the largest number of multidimensional poverty, out of the total sample respondents where 15% of the population accounts for more than 18% of the multidimensional poverty among SC/STs in that district. This is also true for the districts of Kurnool, Guntur, Krishna, west Godavari, Srikakulam and Chittoor, where the share of multidimensional poverty is higher than the population of Andhra Pradesh. Thosesix districts are home to 59% of the multidimensional poverty and they account for 45% of the total population. Among the districts, Prakasam district has the largest share of multidimensional poverty. It is home to more than 9% of the total multidimensional poverty, though it has only 7.8% of the total population. It is also found that the contribution of districts to multidimensional poverty varies within the districts.

Table A-2 DecompositionMultidimensional Poverty

In table A-2 indicates the overall picture of the multidimensional poverty. Decomposition is an important and useful tool to understand the contribution of each dimension and indicator to multidimensional poverty. At the district level, decomposition results are presented across dimensions and indicators (Table A.2).In India the average for people below poverty line for all groups in India is 30 per cent of Scheduled Caste and 48 per centbelonging to scheduled tribes in rural areas are not able to meet their basic needs. In table A-2 provides the cross classification of education and health by economic poor and non-poor. The decomposition analysis for different indicators validate our results on increasing socio-economic disparities across social groups, which eventually necessitates a change in public policy paradigm based on equity and social justice. Our finding on multidimensional poverty shows clear evidences among SC/STs are high in the state.

Table 6.6: A.2: Decomposition of Multidimensional Poverty Index by Dimensions and Indicators in districts of Andhra Pradesh, 2004–05

Andhra Pradesh Districts	Education		Economic		Health		Household Environment		MPI
	School enrolment	Years of Schooling	Consumption poor	Job insecurity	Health insurance	Under weighting	Water	Sanitation	
	1.9	**9.7**	**3.3**	**16.2**	**29.4**	**8.2**	**4.5**	**26.7**	**0.153**
Anathapur	2.3	9.5	3.9	13.5	30.2	6.8	8.5	25.4	0.09
Kurnool	1.9	10.9	1.2	16.0	30.4	16.1	8.7	24.9	0.17
Chittoor	1.9	8.1	0.7	20.2	29.8	9.2	2.0	28.1	0.19
Nellore	1.9	10.7	3.6	16.4	28.3 8	8.7	3.5	26.9	0.16
Kadapa	1.8	9.2	7.8	12.7	29.7	8.7	3.4	26.8	0.15
Prakasam	14.6	8.3	8.3	10.4	33.3	33.3	0 0	25.0	0.02
Guntur	6.4	5.1	5.5	14.8	30.4	8.0	3.4	26.4	0.08
Krishna	4.1	6.4	17.9	10.1	29.0	4.4	1.5	26.6	0.21
West Godavari	4.7	8.8	15.8	11.6	24.4	7.7	1.8	25.2	0.23
East Godavari	1.8	5.8	16.3	13.2	22.5	9.5	4.5	26.2	0.27
Visakhapatnam	1.8	6.6	17.4	12.9	21.9	9.8	8.1	21.7	0.26
Vijayanagaram	0.4	9.2	0.4	5.4	32.1	11.3	11.7	29.6	0.06
Srikakulam	0.3	1.4	0.0	5.2	30.9	8.2	23.5	30.6	0.26

Table A-2 indicates that overall decomposition multidimensional poverty scenario of Andhra Pradesh districts. In the table there are eight indicators, the deprivation related to access to health insurance contributes the most (29.4%) to overall poverty, followed by sanitation (26.7%). The other indicators in order of their deprivation are consumption poor, job insecurity, underweight, years of schooling, drinking water and school enrolment. Among the four dimensions, it is clear that deprivation in health and household environment contribute more to overall poverty, followed by the economic dimension and education dimension.

District level variations among the deprivation indicators are robust. In most of the districts, deprivation in access to health insurance and sanitation contributes the most, compared to the other deprivation indicators. Among the high population district, sanitation contributes more to the MPI in the district of Prakasam, Guntur, west Godavari and Krishna, while in all the other districts health insurance contributes more. It has been observed that job insecurity has a significant contribution in most of the states. Among the major districts, the contribution of job insecurity is high in Chittoor (20.5%) followed by (undivided) Nellore andKurnool. Hence, it is worth noting that in all the districts, health and household environment are two leading contributors to multidimensional poverty.

At the district level, among those who are economically poor, 27% are educationally poor, 89.8% are health poor and 88.7% are poor in household environment. Similarly, among those who are economically non-poor, 12% are educationally poor, 90.4% are health poor and 90.7% are poor in household environment. The correlation coefficients between those who are economic poor and those who are education poor, health poor or household environment poor was are respectively 0.70, 0.11 and 0.55 (correlations computed at the district level).

VII. Discussions and Conclusions

The research results clearly evidently demonstrates that increasing income inequalities and disparities across SC/STs in terms of economic and social indicators. The decomposition analysis for different indicators validate our results on increasing socio-economic disparities across SC/STS, which eventually necessitates a change in public policy paradigm based on equity and social justice. Our finding on inequalities in the income shows clear evidences of districts inequalities in the AP state.

Income inequalities among SCs and STs is distributed around a lower mean and in a more egalitarian manner vis-à-vis income distribution among the others. Per capita income in Andhra Pradesh is clearly higher for non-SC/STs as compared to SC/STs. But among the poor, mean income does very much across among

SC/STs. Moreover, it can see that the income inequality is higher among SC/STs compared to others. In Andhra Pradesh every alternate person among SCs and STs is poor, but records never claiming.

The results of the comparison of Headcount Ratio (H), Intensity of Poverty (A) and Multidimensional Poverty (M0) with the Estimates provided by Jayraj and Subramanian and by Alkire and Seth at the District level in Andhra Pradesh. MPI index depict that in the case of educational (school enrolment, years of schooling), out of total multidimensional poverty. On the other side economic (consumption poor, job insecurity), Health (health insurance, under weighting), household environment (water, sanitations) MPI is more than 90 percent contribution is due to within inter-districts inequalities and remaining due to income inequalities in all the district of Andhra Pradesh.

The differentials of multidimensional poverty vary largely among SC/STs with inter-districts of Andhra Pradesh. The decompositions of MPI by dimensions show that the deprivation in health contributes largely to the MPI in most of the districts followed by deprivation in household environment, work/employment and education. Sanitation and cooking fuel contribute more to overall poverty in the household environment dimension. In Andhra Pradesh decompositions by districts have shown higher concentrations of poverty in some parts of the Andhra Pradesh. We also found that the districts of Prakasam district, Kurnool, Guntur, Krishna, West Godavari and Srikakulam that account for about 45% of APs population have a concentration of more than 50% of the multidimensional poverty.

Finally we observe that higher income inequalities among SC/STS are high in all districts of Andhra Pradesh. In other words, as the estimated indices show, the incidence and intensity of poverty are strongly positively correlated. This observation is based on sample data from only inter-districts of Andhra Pradesh purposely selected to measure the income inequalities among SCs and STs as against others (upper castes). .

7.1 Discussions

The Political economy of distributive policies are important, but these policies will have a limited impact on poverty if it leads to increases income inequalities among SC/STs. High-growth strategy focusing on the lower quintiles within the SCs, STs may be more effective (Mutatkar, 2005). From the policy point of view, several steps have been taken to bridge the gaps between the disadvantaged groups (namely, SCs and STs) and others in the form of a special component plan and sub-plans. Likewise, special area programmes were launched with a view to reducing regional disparities and deal with the legitimate aspirations of people in these neglected regions (Planning Commission, 2011). Although there has been convergence among disadvantaged social groups over the years in terms of various social and economic indicators, yet, the results from the study of Andhra Pradesh suggest that the gap still persists in terms of various development indicators that manifests the clear divergence, that continue gathering evidence. This divergence requires extensive policies to counter this deep rooted among SC/STs within inter-districts of Andhra Pradesh to see the true face of development.

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