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**K-B-K DISTRICTS OF ODISHA: HOW FAR THOSE UNDERDEVELOPED
DISTRICTS ARE POVERTY ALLEVIATED?**

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ABSTRACT

This study is an attempt to investigate the statistical picture of poverty and inequality of the backward KBK* region of rural Odisha. Based on unit level state and centre pooled data of NSS (National Sample Survey) this paper has been prepared (as the sample size of NSS is not adequate for substrate (regional) level analysis). A special poverty line has been derived for KBK* using the price index scientifically calculated from the unit level data. The entire population has been distributed into decile classes based on the rank of monthly percapita expenditure. The regional inequality in living standard has been analysed using Gini-coefficient and Lorenz's ratio. Finally this paper has studied a comparative statement on poverty and inequality of KBK* region with rest Non_KBK* portion of rural Odisha.

INTRODUCTION

From poverty point of view Odisha has been one of the poor states among the major states of India. The state has been operating on the assumption that the development of Odisha's immense reserve of natural resources would lead to all round development of the state and thereby also alter the conditions of the poor. However, after six decades of development Odisha still has a very large number of poor populations.

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The proportion of poor in Odisha has always remained higher than the national average. For measurement of poverty, Planning commission of India has been adopted the concept of absolute measure¹ According to the recent measure of Tendulkar Committee²(on behalf of planning commission) 29.5% of people in India are suffering from poverty and the figure is 37% for Odisha. Also the poverty percentage in rural sector is 33.8% and 39.2% for all India and Odisha respectively. Again according to this report poverty has been declined in 20 percentage points for Odisha i.e from 57 to 37 from 2004-05 to 2009-10. Again the poverty stricken KBK region comprising undivided Koraput (i.e., Koraput, Nabarangpur, and Malkanagiri & Rayagada), undivided Bolangir (i.e., Subarnapur & Bolangir) and undivided Kalahandi (i.e., Kalahandi & Nuapada) districts is the poorest and most backward

region of India. The region also suffers from acute economic and social disparities. This paper attempts an experimental investigation to examine the poverty and regional inequality in standard of living within rural Odisha, considering KBK* and non_KBK* regions as the unit of analysis. In the whole paper MPCE (monthly per capita consumer expenditure) relating to different household types (i.e. labourers, cultivators etc.) and social groups (SC & ST etc.) has been taken as the indicator for standard of living as it includes all expenditure relating to food, clothing, education and health etc. In this present study the KBK* consists of all official KBK districts along with three other backward districts like Gajapati, Kandhamal and Boudh. Hence for this paper the backward region KBK* consists of 11 backward districts. The Non_KBK* region consists of the rest other 19 districts of Odisha which are not covered under KBK*.

DATA DESCRIPTION AND SOURCE

As the sample size of NSS is not adequate for substrate (regional) level analysis, this paper is based on state and center pooled data of Household Consumer Expenditure Survey conducted by NSSO (National Sample survey Organization) during its two recent quinquennial rounds i.e 61st (2004-05) and 66th (2009-10) rounds. The central sample raw data set is obtainable from NSSO, Government of India & the state sample raw data set is obtainable from Directorate of Economics & Statistics, Government of Odisha. These two data sets contain the MPCE (monthly per capita consumer expenditure) of each member of sample households to be used for the study. For further analysis these two data sets are pooled using certain statistical methodology. The sampling frame for NSS 61st round was the list of 2001 census villages and 400 number of sample villages had been surveyed out of 51349 census villages. The

sample proportion for 61st round was 0.8% i.e. also less than 1%. Also the sampling frame for NSS 66th round was the list of 2001 census villages and 372 number of sample villages had been surveyed out of 51349 census villages. Again the sample proportion for 66th round was 0.7% i.e. also less than 1%. The above said two rounds i.e. 61st and 66th were last two recent quinquennial rounds of NSS. For Odisha two different equal and independent samples i.e. Central and state samples had been surveyed by two different organisations i.e. NSSO, Govt of India and Directorate of Economics & Statistics, Govt of Odisha respectively. By pooling these two raw data of two independent samples of equal size, the sample size of pooled data becomes doubled. For this paper, it has been decided to obtain estimate for two specific region KBK which consists of eleven backward districts and Non_KBK consisting of rest 19 districts of Odisha. For data pooling and analysis for this study STATA 9.0 (software for statistical analysis has been used.

METHODOLOGY

A) For pooling two different data sets the study follows the procedure of B.S. Minhas and M.G. Sardana published in Sarvekhsana (July-Sept90). According to this method pooled estimate at stratum level is calculated as the weighted average of central and state sample estimates with number of primary units³(villages) as weights at stratum level. Two different data sets of state and central sample has been taken into a common format with required information like mpce, social group and household type etc of each sample household surveyed. Multiplier⁴ has been computed for each data set separately using the estimation procedure of NSS for two different rounds (61st and 66th). The two data sets of state & central sample with multipliers has been merged to make a single data set with double size and then the

pooled multiplier is calculated using primary units (villages) as weights at stratum level.

B) Decile classes has been made using the rank of MPCE of the sample households of the pooled data set for two different rounds separately. The rural mpce distribution has been constructed through 9 decile classes representing the 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80% and 90% points of distributions. The decile class of mpce may also be called as 10th, 20th, 30th, 40th, 50th, 60th, 70th, 80th and 90th percentiles.

C) For poverty analysis of KBK and Non_KBK regions the poverty line of Tendulkar committee² has been used. For Non_KBK region the declared poverty line (i.e Rs 407.78 for 2004-05 and Rs 567.10 for 2009-10) of rural Odisha has been used. But for KBK region a **regional poverty line** has been derived using the derived Price Index of KBK region with relative to Odisha (i.e **Rs.405.26 for 2004-05 and Rs.561.33 for 2009-10**). The **price index** has been derived from the NSS pooled data by making decile classes of mpce in rural sector of Odisha as well as KBK and Non_KBK regions. Keeping base year as 1999-2000 the price index has been calculated for each decile classes of both KBK and all Odisha for both 2004-05 and 2009-10. Then by taking geometric average of price relatives of the decile classes the **Jevons index** has been calculated for 2004-05. But for 2009-10, the Fisher's Ideal index has been calculated for each decile class and then the **Jevons index** has been calculated for final index of 2009-10. The formula for **Fisher's ideal index** and Jovons index is given below.

P_j = , where **P_j** is the Jevons price index,
P_t = Current year, **P₀** = Base year

$$P_j = \left(\prod_{i=1}^n P_{t_i} / P_0 \right)^{1/n}$$

P_f = where **P_o** = price index of base year,
P_c = price index of current year, **P_o** / **P_c** *

P_f = Fisher's Ideal price Index

D) The devices GINI COEFFICIENT¹ and LORENZ CURVE¹ have been used to measure the inequality in MPCE for KBK* and non_KBK* regions. The Gini coefficient (also known as the Gini index) is a measure of statistical dispersion developed by the Italian statistician and sociologist Corrado Gini. The Gini coefficient measures the inequality among values of a frequency distribution (for example levels of expenditure). A Gini coefficient of zero expresses perfect equality where all values are the same (for example, where everyone has an exactly equal expenditure). A Gini coefficient of one expresses maximal inequality among values (for example where only one household has all the expenditure). To construct the Gini coefficient, the cumulative percentage of X_i (distribution of population low to high) has been taken on the horizontal axis and the cumulative percentage of Y_i (distribution of consumption expenditure) has been taken on the vertical axis. Then GINI INDEX OR GINI COEFFICIENT has been calculated using the following formula.

Gini coefficient =

$$1 / (100 * 100) * \{ \sum [X_i * (Y_{i+1})] - \sum [Y_i * (X_{i+1})] \}$$

A graphical representation of inequality distribution developed by American economist Max Lorenz in 1905 is called as Lorenz curve. On the graph, a straight diagonal line represents perfect equality of the expenditure distribution; the Lorenz curve lies beneath it, showing the reality of expenditure distribution. The difference between the straight line and the curved line is the amount of inequality of expenditure distribution, a figure described by the Gini coefficient. A graphical representation of inequality distribution developed by American economist Max Lorenz in 1905 is called as Lorenz curve. On the graph, a straight diagonal line represents perfect

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All calculations and analysis relating to social group, household type, KBK & Non_KBK regions and decile classes have been prepared by using the software STATA 9.0 and MS_EXCEL_2007.

Notes

Planning commission adopts the concept of absolute measurement. According to this measure a minimum level of consumption expenditure is determined on the basis of calorie requirement. This minimum expenditure level is termed as poverty line. Planning Commission set up an expert group under the chairmanship of Professor Suresh Tendulkar to examine the issue and suggest a new poverty line and estimates. The expert group has considered this issue in detail and has suggested new methodology to arrive at state wise and all India rural and urban poverty lines for 2004-05 and 2009-10.

(A two-stage stratified sampling design has been adopted for both 55th & 61st round survey. The first stage units (FSU) or primary units were census villages in the rural sector. All rural areas of each district constitute a separate rural stratum.)

The value which is multiplied to sample characteristics (statistic) to obtain population characteristics (parameter) is called as multiplier.

In 1863, English economist Jevons proposed taking the geometric average of the price relative of period t and base period 0.

Irving Fisher (1922) invented —ideall geometric mean of the Laspeyre's and Paasche's indices which is called as Fisher's ideal index number.

CONCLUSION

This paper has investigated a number of issues related to poverty and the inequality in standard of living for KBK* and Non_KBK* regions of rural Odisha. The trend of poverty is in declined motion in all over rural Odisha along with the backward KBK* region. But the annual compound declined rate of poverty in KBK is nearly four to five times less significant than Non_KBK*. In spite of massive planning and bulky expenditure of both state and central government for this backward KBK region of rural Odisha the motion towards rural KBK* free from poverty very slow. This may due to lack of proper implementation of the poverty eradication schemes. Also it may be one cause that due to the huge poverty gap of the KBK* region, progress is slow to bridge the gap.

But regarding inequality this study gives different conclusion than poverty. It concludes some eye catching statement on these two regions regarding class wise (Bottom to top based on per capita expenditure), social group wise (SC ST etc) and household type wise (labourers, cultivators etc) living standard of the people. The class wise inequality is declined for KBK but there is no change for Non KBK region from 2004-05 to 2009-10. Similarly in KBK region the inequality distribution over different household types has been declined from 2004-05 to 2009-10, but it is not same for Non KBK. More over there is more inequality in Non KBK region than KBK from 2004-05 to 2009-10. Hence it can be concluded that there may be some unidentified back ward area in Non_KBK with very miserable living standard or some lower class poor people may be there not getting special facility like the poor people of KBK region. In all the three rounds of observation, the percentage share of SC & ST population is highest in bottom (first)

decile class for both KBK and Non-KBK region. The astonishing fact is that inspite of the vast planning of government specially for KBK region as well as SC and ST community the percentage share of SC and ST population is gradually increasing in bottom (lowest) decile class from 2004-05 to 2009-10. The middle class SC & ST people are in rising condition of living standard while bottom class SC& ST people are falling down. Hence it can be concluded that the special facilities provided to the SC and ST people of KBK region are not reaching properly to the bottom level.

Finally this paper suggests that at Government level proper planning should be implemented to identify the non facilitated backward area or the poverty stricken people with very miserable condition in Non-KBK region and essential steps should be taken to properly facilitate the bottom level unreached people of KBK* by proper utilization of scope and facilities provided only for them.

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