Location Based Poverty Line With And Consumption Patterns: A Case Study of Birbhum District Of West Bengal

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Abstract

The latest estimation of poverty line as done by Rangarajan committee (2014), was based on 68th round unit level NSSO data on consumption expenditure which was applicable for whole nation. Then the estimation of state specific poverty line as well as poverty line for rural and urban segments has been done by suitably adjusting the national level poverty line with price differentials. The committee ignored the impact of particular locations with different distances from a district town having different occupational structures, on consumption pattern. They have ignored the facts that consumption pattern differ not only among states but also within a state among the urban areas according to their distances from metropolitan cities, and also among the rural areas according to their distances from district town. This study is concerned with fresh estimation of poverty line income on the basis of consumption pattern and minimum nutritional requirement of people living in different urban locations within a state. Our contention is that pattern of consumption changes not only over time (Utsa Patnaik,2010), but also among metropolitan cities as well as urban areas and rural areas in a particular States, accordingly the poverty line should also be different. To examine the validity of our presumption, in this study we have chosen three rural areas Binuria, Kuchly and Saspur surrounded by Bolpur a popular towns of Birbhum District, of West Bengal and estimated the poverty lines of these locations, on the basis of respective consumption baskets of each rural area, separately. We have seen there is significant difference in consumption pattern and poverty line income level of these locations.

JEL Codes: I32, I3

Keywords: Poverty Measurement, India, Adult Equivalent Scale.

Introduction

It is widely observed that there has been perceptible decline in the intake of cereal consumption among people under different income classes. It is also indicated by some studies (C.H.Rao,2000,Parthasarathi Rao 2006) based on National Sample Survey Reports that there has been some increase in consumption of some high value food items in place of low value cereals. On the basis of comparative analysis of different rounds of NSSO reports on consumer expenditure, it is pointed out by some literature that there is decline in nutritional levels of people belonging to different income classes (R.Radhakrishna and K. Venkata Reddy, Ranjan Ray,2008). It may also be pointed out that the decline in nutritional level, as estimated on the basis of NSSO reports, is not specific to poor households only, it is also observed among households belonging to higher income categories. This observation that rise in per capita real income and falling magnitude of poverty are accompanied with falling nutritional level of people under different income classes, confirm the need to conduct a re-examination of the method of estimation of poverty. The facts of falling nutritional level and changing composition of food consumed by people clearly indicate that fall in calorie intake due to decline in consumption of cereals might not have been compensated by the increased consumption of high value food items by the house holds even in the higher income classes. Apart from income it is observed that there is difference in food habits among people involving with different type of occupational structure such as consumption pattern with Agriculture as a major source of income may be different with occupational type 'Self-Employed in non- Agriculture'. With increasing degree of crop diversification in agricultural production degree of consumption diversification is getting intensified. There has been remarkable change in the consumption pattern of people with a shift from cereals and cereals based food items to high value food items. People are becoming more and more health conscious which leads to a change in their consumption habit and

preferences. However while high value food items are sometimes suggested as good sources of nutrition high value food are more expensive compared to cereals and cereals based food. So in spite of the fact that consumption habit and preferences play an important role in the process of selection of food item in consumption basket, in practice relative prices of food items and income level of the consumers sometimes appear to be most important factor particularly in the case of people living in lower stratum of the income classes.

In this study our objective is to examine how consumption pattern of people belonging to different income classes change with location, profession and income classes. With this objective in view, the study carries out detailed investigation into consumption pattern of four Metropolitan Cities of India, four District Towns and nine villages of West Bengal. We think distance from Metropolitan City is an important factor in influencing food habit of people living in District Towns. Similarly food habit of people living in different rural locations may differ according to distances of each rural area from a particular district town. Accordingly degree of consumption diversification differs among places placed under different distances from Metropolitan City or District Town. The study also takes up an investigation into how consumption pattern may change across different occupation types and different income classes. Lastly we examine the relation between location-wise nutrition levels of the households under different expenditure classes. This will enable us to estimate the extent of nutritional deprivation. This consumption pattern analysis may be used to reveal actual scenario of poverty at local levels; the latest estimation of poverty line was based on National level consumption basket adjusted with appropriate price relatives to fit into different States and Rural and Urban Segments. This method suffers from serious limitation due to inappropriate methodology followed. The official estimation is based on a single average composition of food basket and ignores regional differences in consumption habits and composition of food basket that food composition may differ across income classes and occupation type. Variation in composition of consumption across locations reveal the need for estimation of poverty line on the basis of local consumption pattern in order to get idea regarding magnitude of actual nutritional deprivation of the people living in different areas of the country. This is important from the point of view of local level poverty eradication programmes and development programmes.

Research Objective

As this study is concerned with nutritionally deprived people we analyze first food consumption patterns. Nutritional deprivation depends on calorie intake of people. Food consumption pattern is very important as it is generated calorie from different items of food. Food habit is influenced by urbanization, so situation of locations and distances from a District Town or Metropolitan City of that location are very important. Therefore it is required to analyze location-wise consumption pattern. Apart from locations, food consumption may influenced by income classes and occupation type also. Top expenditure classes may afford high value food items, on the other hand, bottom expenditure classes consume very less amount of high value as they cannot afford all these expensive food items sufficiently. Consumption patterns may change with a change in occupation. Calorie consumption of people with nature of major occupation 'Agriculture' may be different with people with nature of major occupation 'Self-Employed'. As these three factors may influence consumption patterns, it is required to analyze relative impact of which factor is greater to estimate Nutritional Deprivation of people. As we hypnotise relative impact of change in location with change in occupation or expenditure is greater, we estimate nutritional deprived people location-wise. We discussed before that expenditure class may influence calorie consumption but lack of awareness or impact of urbanization with higher expenditure class people may suffer with nutritional deprivation. So we estimate nutritional deprived people expenditure class wise also. To understand location-wise diversification of food basket, location-wise consumption diversification may be estimated. Consumption diversification may be influenced by Production diversification. So we try to estimate production diversification in rural agricultural household. On these background to examine the validity of the above hypotheses, we have undertaken detailed Statistical Analyses of relevant data collected from field surveys supplemented by unit-level NSS data with the following specific objectives:

1. To analyze consumption patterns of people at different locations.,To examine the factors on which consumption pattern depend.,To estimate degree of nutritional deprivation across income classes and different locations. To examine relative impact of distances from Metropolitan Cities or District Towns (for urban area and rural area, as the case may be) vis-a-vis occupation type on consumption pattern, with the help of ANOVA and F-test.
2. To estimate the number of poor under different locations, different income groups.
3. To examine the factors that influences the diversification of food baskets, statistically significantly.
4. To analyse relationship between per capita calorie consumption and production diversification.
5. To estimate location-wise nutritionally deprived people.

Methodology

In this paper we have used latest available National Sample Survey unit level data of 68th Round (2011-12) on consumption expenditure to estimate poverty line, incorporating impact of location wise characteristics and impact of nature of occupation with which majority of people in a place are mostly involved .For conducting this study, we have taken consumption data for three rural areas of North 24 Paragana a district of West Bengal. These rural areas are selected by using random number table centring Barsat(District Town of North 24 Paragana) by radius of 5 km (Amdanga), 35 km (Gaighata) and 60 km (Sandeshkhali). After choosing locations we have broken the unit level data for each location in 20 fractiles. The consumption basket which generates the minimum suggested calorie level (as per ICMR), is identified. It is converted to money value and is taken as the poverty income for that location. For estimating minimum requirement of other non food consumer items and their total money values we have taken the median fractile (45-50%) values of clothing expenses, rent, conveyance and education expenses, which are treated as the normative requirements(Rangarajan Committee) of the basic non-food expenses. Monthly per capita expenditure for 'other non food' items except the essential non food items (clothing, housing, mobility and education), have been taken from the fractile which fulfils the minimum nutritional norms. All these are the part of poverty line income.

To examine the difference in consumption pattern among people under different expenditure groups the location-wise data have been broken in five expenditure classes. We have used the poverty line income derived by Rangaranjan committee i.e. Rs. 934 for rural areas of West Bengal, as the upper limit of bottom expenditure classes. The bottom expenditure class is the class of poor people as per Rangarajan Committee estimate of poverty line. We have also considered the minimum calorie intake following ICMR norms for estimation of poverty line i.e. 2155 kcal for urban areas.

We have taken four occupation types: Agriculture, Self- Employed, Regular Wage/ Salaried, Casual Labour in Agriculture, Casual Labour in non-Agriculture and 'others'. As per NSSO the occupation type 'others' means households having no source of income.

Adult equivalent Scale

Additionally we have incorporated Adult Male Equivalent Scale in estimating average minimum consumption required by a person to fulfil nutrition. To calculate Adult Male Equivalent Scale we have taken total food expenditure as dependent variable of a household and total expenditure and number of adult male persons, number of adult female persons, number of male children and number of female children in a household and square of household size as independent variables. {Kumer , Holla and Guha (EPW,July 26,2008)}.

$$y = a + bx + cz + dm + en + ft + gt^2 \quad \ldots\ldots\ldots\ldots\ldots(i)$$

Where y absolute value of food expenditure of a household (dependent variable) and as independent variable, x (adult male in the family), z (adult female in the family), m (adult male children in the family), n (female children in the family)and t(total expenditure of the household).

Tobit Regression

To test the impact of change in location, change in expenditure class and occupation type, on degree of consumption diversification, we have run Tobit regression (equation-ii). of the form ,.......(ii) (Where, E[| = 0, where ~N(0,σ²)). In both side censored model, , if Y and , if ,

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Where Location() i=2(Binuria),3(Kuchly),4(Saspur) in respect of Bolpur. Expenditure Class() j= 2(expenditure class 2), 3(expenditure class 3), 4(expenditure class 4), 5(expenditure class 5), in respect of expenditure class1 and Occupation () k= 1 (Self Employed Agriculture),3(Salaried),4(casual lab-Agri), 5 (Casual lab non agri) in respect of occupation type1(self employed). Y= degree of consumption diversification(dependent variable).

Two-way-ANOVA

To analyse the impact of location and income (per capita consumption expenditure as proxy to income) on calorie intake we have run two-way ANOVA using average calorie intake as dependent variable. We have also used 2-way-Anova to examine the statistically significant difference for different locations and occupation types on calorie consumption for each expenditure class. Here average calorie consumption per capita per day has been used as dependent variable and location and occupation type has been used as independent variables.

Lastly we estimate poverty line on the basis of calorie consumption generated from location specific composition of food basket, incorporating Adult Male Equivalent Scale for estimating per capita food consumption of households.

Observation

We analyze in this chapter detailed features of some urban and rural locations of the district of Birbhum which is near about 150 km far from Kolkata and very well connected with Kolkata. We conduct household survey of these locations. Locations are chosen randomly centering round Bolpur town with radii 5 km, 15km and 25km., selected rural areas are Binuria, Kuchly, and Saspur respectively. Firstly we list whole population of each location and break the data into five income classes. After that we choose households from each stratum proportionately. We collect information from each household about consumption of food and non-food in details through direct interview method. We also collect information regarding occupational structure and agriculture production (if any).

In the first section we analyze the detailed Average Monthly per Capita Expenditure for all the sample households for each location. In the second sub-section (4.1), we explain the consumption patterns or food habits of people living in these locations. In the third sub-section (4.2), we explain detailed occupational structure of these locations and analyze the relation between calorie consumption and occupational structure. Lastly we analyze statistically the factors which influence calorie consumption from cereals and degree of food consumption diversification. We also estimate production diversification, and try to estimate correlation between calorie consumption diversification and production diversification according to different expenditure classes. With these we also try to analyze relative impact of change in location and expenditure (proxy of income) on per capita calorie consumption and relative impact of change in location and occupation on per capita calorie consumption. We use Adult Male Equivalence Scale for deriving per capita food expenditure or calorie consumption in a household. Lastly we estimate fresh poverty lines for these locations considering composition of food basket of each location.

Table-1.0 Sampling distribution of respondent households According to Average Monthly per Capita expenditure On The Basis of Estimated Adult Male Equivalent Number of Family Member for all locations

Exp_Class	Bolpur		Binuria		Kuchly		Saspur	
	per centage of hh	Avg_MPCE	per centage of hh	Avg_MPCE	per centage of hh	Avg_MPCE	per centage of hh	Avg_MPCE
<1373/934	26	1088.8	10	903.7	6	916.9	8	777
1373-2000	12	1593.1	58	1742.1	58	1494.7	74	1420.4
2000-3000	24	2166.7	24	2597.7	32	2430.4	16	2587.7

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3000-5000	24	3693.7	6	3730.6	4	3238.5	2	3573.1
>5000	14	8009.6	2	6711.5	-	-	-	-
Overall	100	3002.1	100	2082.3	100	1829.2		1598.8

Source: Authors Calculation   * MPCE average monthly per capita expenditure

We see in Bolpur town area monthly per capita expenditure is higher than other rural areas. As we move from Bolpur to far and farthest rural areas monthly per capita expenditure is gradually falling. We see people living below official poverty line in Bolpur is almost more than one fourth. Although people living below official poverty lines are gradually decreasing with movement from Bolpur to far and farthest rural areas, percentage of people living just above of this official poverty line is greater than the other expenditure classes. We see that per capita monthly average expenditure for the class just above bottom expenditure class is very low. Persons belonging to these two classes may be considered as actually poor. The top two expenditure classes taken together constitute almost 40 percent of households in Bolpur, but this percentage abruptly declines as we move from Bolpur to other three rural areas. In Kuchly and Saspur there is no people living in this top expenditure class. Moreover there is abrupt jump in the monthly average per capita income from 3693.7 to 8009.7 and from 3730 to 6711 for Bolpur and Binuria respectively. But for other rural locations there is no jump. Bottom two income classes constitute 38 percent of households in Bolpur but this percentage goes on rising as we move from Bolpur to the rural areas. With increasing distance from Bolpur this percentage is 68 for Binuria, 64 for Kuchly and 82 for Saspur. This shows while poverty in town Bolpur is acute, in the rural areas extent of poverty is much sharper. If we observe the average per capita monthly expenditure by expenditure classes, the distribution is not systematic. We observe unequal income distribution for all rural locations. We observe as we go from Bolpur to Binuria (adjacent village), Kuchly (far) and Saspur(farthest) location away from the town, monthly per capita expenditure fall.

.Next we discuss per capita food expenditure of the households. Since there is difference in household size and composition, we find it necessary to use Adult Male Equivalence Scale to derive per capita food expenditure or per capita calorie intake.

Table -1.2 Adult male equivalence for consumption

Location	Adult Female	Child Male	Child Female
Bolpur Town	0.84	0.59	0.56
Binuria	0.72	0.68	0.62
Kuchly	0.59	0.93	0.49
Saspur	0.52	0.88	0.18

 Source: Authors Calculation

We observe from table-1.2 that an adult female of each location consume less than an adult male. Inequality between male and female in consumption is worsening as we move far and farthest from an urban area. A female child also consumes less food than a male child. Indian male based culture work behind this.

Table-1.3: Expenditure class-wise proportion of expenditure of food and non food

Bolpur Town			Binuria		Kuchly		Saspur	
Expenditure Class (in Rs.)	Proportion of Expendi	Proportion of Expenditure on	Proportion of Expenditure	Proportion of Expenditure on	Proportion of Expendit	Proportion of Expenditu	Proportion of Expendi	Proportion of Expenditure on

	ture on food	non food	on food	non food	ure on food	re on non food	ture on food	non food
<1373/934	49.2	50.8	63.8	36.2	64.7	35.3	70.5	29.5
1373-2000	39.7	60.3	58.7	41.3	59.3	40.7	58.8	41.2
2000-3000	36.0	64.0	53.3	46.7	56.8	43.2	56.7	43.3
3000-5000	35.3	64.7	41.8	58.2	52.2	47.8	32.8	67.2
>5000	21.5	78.5	21.1	78.9	-	-	-	-
Overall	37.7	62.3	56.3	43.7	58.3	41.7	58.9	41.1

Authors Calculation

From table 1.3 we observe that people living in urban area spend less on food. The proportion of expenditure on food gradually decreases with increasing income irrespective of locations. However, the picture is totally opposite for spending on non-food. People of higher expenditure classes spend greater proportion in non-food items. On the other hand, rural people spend higher proportion of their total expenditure on food rather than on non-food items. Average expenditure on food is gradually increasing with movements from Bolpur to rural areas with increasing distances for all income classes except for Saspur where for some income classes expenditure on food is not the highest among the rural areas. In Saspur proportion of food expenditure is lower or remains same as in Kuchly in all income classes except for extreme bottom expenditure class. We see their average expenditure is also very low. It may be due to the fact that the people of Saspur are compelled to spend some minimum amount of their income on very essential non food items which reduces their consumption of food. In Saspur people in extreme bottom expenditure class spend almost all of their income to purchase food. We observe a trend of spending in higher proportion on food as we move from township to village with higher distances for people in the bottom expenditure class. Rural people spend less on non-food consumption.

Section 4.1 consumption patterns and calorie intake of people of different areas of Birbhum District

In this section, we shall see in detail how food habits of people differ across different rural areas centering round an urban area with different radii.Average per capita calorie consumption varies according to expenditure class and according to location (tab\ Calorie consumption increases gradually with movement from Bolpur to other rural areas with increasing distances except for Saspur. But in Kuechly average calorie consumption is greater than other areas. This may be due to the effect of occupation which we shall explain in the next section. In Sahaspur average calorie consumption is very low except for fourth income class (table-1.4). We see in table 1.0 average monthly per capita expenditure is very low for people of Sasur. With lower consumption of calorie and low average per capita expenditure in Saspur, we may define the place as poor.So far we have discussed impact of location on expenditure on food vis-à-vis non- food and on average calorie intake. Now we shall take up the question of how food consumption pattern differs with differential importance on different items of food in total calorie intake.

Table-1.5 Proportion of calorie intake from different food items: Bolpur Town

MPCE	Cereals	Pulses	Milk & Milk Products	Egg_fish_meat	Vegetables	Fruits (Fresh)	Fruits (Dry)	Others*
<1373	65.2	2.8	2.3	1.6	7.5	0.4	0.0	20.0
1373-2000	56.1	4.2	2.7	2.5	11.1	0.5	0.0	23.0
2000-3000	53.9	3.1	5.5	2.8	9.4	1.6	0.0	23.7

3000-5000	52.8	3.7	8.2	3.1	9.1	2.1	0.0	20.8
>5000	44.2	3.1	12.5	3.2	8.4	3.4	0.8	24.3
Overall	55.5	3.3	6.0	2.6	8.9	1.5	0.1	22.0

Source: Authors Calculation   *salt, oil, spices, beverages, processed food, pan etc.

It is seen from above table that in Bolpur proportion of calorie consumption from cereals, gradually decreases as we go from lower to higher expenditure classes. On the other hand, proportion of calorie from other high value food items gradually increases with higher expenditure class. If we analyze in details we see the bottom three expenditure classes eat only cereals and a little bit pulses, milk and milk product etc. Proportion of calorie consumption from fruits is very negligible for these bottom three expenditure classes. Proportion of calorie intake from dry fruits is almost nill in Bolpur. We notice the bottom three expenditure classes consume lesser proportion of 'others food items' compared to top two expenditure classes.

Coming to Binuria, the most adjacent location to Bolpur town area, we see that people are more dependent on cereals than on high value food compared to Bolpur Town.

Table-1.6 Proportion of calorie intake from different food items: Binuria

MPCE	Cereals	Pulses	Milk & Milk Products	Egg_fish_meat	Vegetables	Fruits (Fresh)	Fruits (Dry)	Others
<934	67.3	1.4	0.0	1.9	9.0	0.2	0.0	20.3
934-2000	63.2	2.4	3.5	2.3	9.5	0.9	0.0	18.2
2000-3000	58.0	3.1	4.9	2.6	9.7	0.7	0.0	21.1
3000-5000	47.2	3.0	14.3	2.4	10.8	1.7	0.0	20.7
>5000	41.7	3.1	10.6	3.4	16.9	2.2	0.3	21.8
Overall	60.9	2.5	4.3	2.3	9.7	0.9	0.0	19.3

Source: Authors Calculation   * salt, oil, spices, beverages, processed food, pan etc.

We see that proportion of calorie consumption from cereals is higher in Binuria than Bolpur for all expenditure classes except for second highest expenditure class. The proportion of calorie consumption from pulses is lower in Binuria than Bolpur for each expenditure class. Proportion of calorie consumption from milk and milk product is greater in Binuria than Bolpur except extreme bottom expenditure class. May be that people of Binuria posses cattle so that they can take home grown milk and milk products. High value food like egg, meat and fish and fruits also may not be affordable to them, so that proportion of calorie consumption from these items is very low compared to Bolpur, for all expenditure classes except top expenditure class. Proportion of calorie consumption from fruits is very negligible for all expenditure classes. Proportion of calorie intake from dry fruits is nill in Binuria. We notice proportion of calorie consumption from 'other food items' is lower than Bolpur.

Now we shall discuss consumption pattern of Kuchly, which is 10 km from Bolpur town but not well connected with Bolpur. We shall analyze now whether people of Kuchly mostly depend on calorie from cereals or they use to take high value food like Bolpur and Binuria.

Table-1.7 Proportion of calorie intake from different food items: Kuchly

MPCE	Cereals	Pulses	Milk & Milk Products	Egg_fish_meat	Vegetables	Fruits (Fresh)	Fruits (Dry)	Others
<934	66.6	3.0	1.4	2.1	7.1	0.6	0.0	19.2
934-2000	63.8	3.6	2.5	2.3	8.9	0.7	0.1	18.1
2000-3000	61.2	3.1	5.5	2.9	7.4	1.4	0.2	18.3
3000-5000	54.0	3.9	7.0	3.6	8.5	1.8	0.5	20.7
>5000	-	-	-	-	-	-	-	-
Overall	62.8	3.5	3.4	2.5	8.4	0.9	0.1	18.5

Source: Authors Calculation   * salt, oil, spices, beverages, processed food, pan etc.

In Kuchly proportion of calorie from cereals consumption is higher than Binuria for all expenditure classes. Proportion of calorie consumption from pulses is also higher than the proportion of calorie consumption from pulses at Binuria. Proportion of calorie consumption from milk and milk products, meat, fish and egg and other high value food is lower than Binuria for all expenditure classes. All expenditure classes consume very negligible amount of fruits and dry fruits. 'Other food items' consumption is less in Kuechly than Binuria. Proportion of calorie consumption from 'other food items' gradually decreases with distance from urban location irrespective of expenditure classes. These may be due to the fact that people of this place may not be well connected to Bolpur in regular basis for their occupation or any other reason, for this they are not used to high value food to the same extent as in Bolpur and Binuria.

Coming to Saspur, farthest location from Bolpur town area, we see that food basket is more dependent on calorie from cereals .This is true for especially the extreme bottom expenditure class. Calorie consumption from cereals being very high , calorie from all other items are lower compared to other places.

Table-1.8 Proportion of calorie intake from different food items: Saspur

MPCE	Cereals	Pulses	Milk & Milk Products	Egg_fish_meat	Vegetables	Fruits (Fresh)	Fruits (Dry)	Others
<934	70.3	2.1	1.6	0.8	8.5	0.9	0.0	15.8
934-2000	66.1	2.6	3.2	1.3	8.0	0.7	0.0	18.2
2000-3000	61.9	3.9	4.6	1.4	9.8	0.8	0.1	17.6
3000-5000	56.0	2.1	4.4	1.9	9.6	0.5	0.0	25.5
>5000								
Overall	65.5	2.7	3.3	1.3	8.3	0.7	0.0	18.0

Source: Authors Calculation   * salt, oil, spices, beverages, processed food, pan etc

As the above table shows proportion of calorie consumption from cereals in Saspur is greater than Kuchly for all expenditure classes. Proportion of calorie consumption from pulses, Milk and Milk Product etc. high value food except vegetables, is lower in Saspur for all expenditure classes compared to Kuchly. However the bottom expenditure class in Saspur is found to take calorie from milk and milk product in greater proportion. This may be due to the fact that people raise cattle in their home and take milk and milk products as home grown products. Vegetables consumption is also little bit greater in Saspur except for people just above official poverty line income, they use vegetables mostly from collection. Proportion of calorie consumption from 'other food items' is lower in Saspur than Kuchly, for bottom expenditure classes.

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Section 1.2 relations between occupation type and calorie consumption of different areas of Birbhum Districts

In this section, we observe detail occupational structure of the mentioned locations. We examine the occupational structure of these areas and its impact on calorie consumption along with location-wise impact on consumption. This section examines how far occupation types of people of different areas influence consumption patterns.

Table-1. 9 Percentage of people belonging to different occupation type with their average calorie intake for different expenditure classes : some areas of Birbhum

Location	Bolpur town		Binuria		Kuchly		Saspur	
	% of Population	Avg cal.intake	% of Population	Avg cal.intake	% of Population	Avg cal.intake	% of Population	Avg cal.intake
Agriculture	NA	NA	21.7	2686.4	64.9	2902.3	16.8	2729.8
Business	36.7	2027.3	37.2	2590.3	21.3	2837.3	37.8	2625.3
Service	38.6	3086.2	25.1	2692.6	5.4	4084.0	7.6	2562.8
Labour in Agriculture	NA	NA	7.7	2268.2	5.9	3040.1	5.3	1065.2
Labour in non Agriculture	16.9	1266.5	8.2	2711.0	2.5	3816.8	28.6	2344.9
Others	7.7	1769.5					3.8	3561.0

Source: Authors Calculation

In Bolpur proper town proportion of people in occupation type 'Service' is higher than any other occupations but almost equal percentage of people are involved with different types of business. Due to presence of central university in Santiniketan which is located 2 km from Bolpur Station, people of the twin locations are well connected with Kolkata and their consumption habit are influenced by urban way of life. People involved in service and business concentrate in this twin locations. Binuria placed very near to Bolpur, is expected to be influenced by food habit and consumption pattern of Bolpur. In Binuria, we also see greater proportion of people involved in occupation type 'Business' but good proportion of people is found to be involved in service and agriculture than any other occupation. People of village Kuchly are mostly involved in agriculture. In Sahaspur nature of major occupation is business and casual labour. However the occupation business includes marginal, small, middle and big businesses. In rural areas people are mostly involved in small ,marginal business and informal activities. We shall now examine how this different types of occupation influence consumption pattern.We see that there is no pattern with regard to relationship between different types of occupation and calorie consumption from different food items   (table-1.9).

We have tested statistically the impact of change in location, expenditure class, and occupational type, on proportion of calorie consumption from cereals in total food consumption. We have also statistically tested the impact of change in all these factors on degree of consumption diversification. We have run two Tobit regressions; first we have run Tobit Regression with proportion of calorie consumption from cereals in total calorie consumption, as dependent variable, secondly we have run a Tobit regression with consumption diversification as dependent variable. The independent variables are location, expenditure class, and occupation type in both cases.

To estimate the impact of change in locations, expenditure classes and occupation types on change in extent of diversification in calorie consumption from different food items, we run Tobit equation;

p value (<.001) (.146)   (.002)   (<.001)   (<.001 (<.001)
           (<.001)   (<.001) (.222) (.042)   (.712)   (455)   (0.115)

Where symbol are in detail in methodology.

Movements from Bolpur to other rural areas enhance degree of consumption diversification significantly for each case except movements from Bolpur to Binuria. The reason behind this insignificant impact is that Binuria is adjacent to Bolpur, may be food pattern of Bolpur is fully adapted by the people of Binuria. The changes from expenditure class-1 to other higher expenditure classes enhance diversification significantly. The change in occupation type from Self employed to other occupation types does not influence degree of consumption diversification except when the movement is to wage/salaried category. In the case of shifts from the category of 'Self-Employed' to 'Wage/ Salaried' category degree of consumption diversification increases.

Now we find it necessary to examine the relative impact of change in income and change in location on calorie consumption on the one hand and relative impact of change in location and change in occupation type on calorie consumption on the other.

We use Analysis of Variance technique to test the significance of relative impact of change in location vis-a-vis change in expenditure classes on calorie consumption.

Table 1.10 the Result of ANOVA for Birbhum District (F value and P-value reported in parenthesis)

Location	Expenditure Class	Location * Expenditure Class
4.979(0.002***)	6.279(0.000***)	3.152(0.001***)

*** Significant at 99% level, ** 95% level, * 90% level

Table.1.10 shows that impact of both change in location and change in total expenditure class on calorie consumption are statistically highly significant. The ANOVA shows variation of location has greater impact than variation in expenditure class for each area of Birbhum.

We have also tested relative importance of location and occupation on calorie consumption for each income class separately by analysis of variance.

Table-1.11 Relative importance of Location vis-a-vis Occupation Type over per day per capita calorie consumption (F value and level of significance)- some locations of Birbhum Districts

Expenditure class	Location	Occupation	location*occupation
<934(exp -1)	1.103(0.389)	1.058(0.433)	0.331(0.803)
934-2000(exp-2)	3.057(0.033**)	0.571(0.722)	1.262(0.265)
2000-3000(exp-3)	11.911(.000***)	5.050(0.003***)	1.785(0.142)
3000-5000(exp-4)	3.714(0.046**)	0.751(0.544)	-
>5000(exp-5)		1.779(0.240)	

It is clear from ANOVA test that for each income class, change in location creates significantly greater impact on calorie consumption compared to occupation, for all income class.

Table 1.12 Official Poverty line and Location based poverty line

Location	Official Poverty Line (Rangarajan Committee)*	% of BPL	Location wise Poverty Line	% BPL
Bolpur town	1372.68	37.7	2458.9	68.1
Binuria	934.1	9.2	2049.4	74.4
Kuchly	934.1	6.9	1783.0	55.4
Saspur	934.1	11.8	1548.4	66.4

* State Specific Poverty line for all Urban areas

From table 1.12 it is seen that the poverty line estimated by Rangarajan Committee has underestimated the actual poverty scenario. We see in Binuria highest proportion of people living below poverty line, on the other hand Binuria has lower nutritionally deprived people, the reason behind these opposite picture

is that as Binuria is an adjacent area of proper town Bolpur , they have diversified their food basket, expenditure incurred to achieve this basket is higher as there is more high value food items. Another reason is that they spend large proportion of their income in non-food also for impact of urbanization. They have not that much of income to compensate it, so there is higher proportion of people living below poverty line. The same reason working behind proportion of people living below poverty line in Bolpur also. But the reason for Saspur is different. They cannot diversify their consumption much but only reason is that they have not subsistence income to achieve minimum requirement for living. Kuchly is in better position among them as they are mostly agriculture based.

Conclusion

We have seen that consumption pattern is different for different metropolitan cities and different district towns and different rural areas. These differences in consumption patterns for different locations and different expenditure classes are statistically significant; separately both variables influence calorie consumption, significantly. The impact of location on calorie consumption is relatively more significant compared to impact of expenditure and occupation. Impact of location on consumption is also greater than impact of occupation type for each location. The money value of minimum required nutrition is different for different villages, towns and metropolitan cities as the composition of food baskets changes for different locations. As a result, the money value of poverty line income for different metropolitan cities and urban areas of West Bengal are different. Our estimated poverty lines are much higher than official poverty line, implying that numbers of poor below poverty line are greater than that of official measure. We can say that official poverty line underestimates the extend of poverty.Poverty alleviation programmes and state level development programmes gear to the poor should be based on consumption pattern of that state. Poverty alleviation programmes and state level development programmes for a metropolitan city should be based on consumption pattern of that Metropolitan City. From the above discussion, it is clear that a single poverty line for all urban areas of a state does not show the actual picture of poverty. For taking policy decisions and development programmes geared to district level urban and rural areas, its distance from nearest Metropolitan Cities and District Town should be taken into account, and separate poverty lines based on actual consumption pattern of respective areas may be estimated accordingly.

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