CONSUMPTION PATTERN IN WEST BENGAL - A STUDY OF PER CAPITA EXPENDITURE ELASTICITY BY INCOME GROUP

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The understanding of consumption patterns of the households of different income groups is essential for the development of successful food security policies. In recent years the studies on consumption patterns had a special focus in the wake of globalization and concern about food security. Empirical information on the determinants of household consumption is necessary both for macro-economic policy as well as for micro-level interventions to improve the nutrient intakes. The present study has been an attempt in this direction. The purpose of this study is to examine the consumption pattern of households in West Bengal. This study reveals that the elasticity of per capita consumption expenditure on food items and non-food items are less than one and more than unity respectively in all income groups. This explain that the proportion of per capita total expenditure incurred on food items declines with the increase in total per capita expenditure and the proportion of per capita total expenditure incurred on non-food items goes on increasing with the increase in per capita total expenditure across the sample households in all income groups.

Keywords: *Food Security, Food Expenditure, Engle Law*

INTRODUCTION

The understanding of consumption patterns of the households of different income groups is essential for the development of successful food security policies. Empirical information on the determinants of household consumption is necessary both for macro-economic policy as well as for micro-level interventions to improve the nutrient intakes. As food is basic necessity, the measurement of food consumption is also used as an alternative to income in assessing household well being. This provides a benchmark for evaluating the welfare programmes. Further, the empirical information on temporal changing in consumption patterns provides an insight into the living conditions of the households and human resources of a country. Therefore it will be helpful in planning the future investment decisions. The studies on consumption patterns had a special focus in recent years in the wake of globalization and concern about food security. Modern day life with all its complexities is influencing the consumption patterns of the population. With the increase in human wants, the intensity of consumption, in terms of goods and services is also increasing. The changing the consumption patterns reflect the living conditions of the population.

Recent studies on chronic poverty and malnutrition (Radhakrishna *et al*, 2004) bring out the stark reality that the apparent decline in official estimates of poverty has not eliminated multiple deprivations. Using national sample survey organization (NSSO) data, they construct three income groups- bottom, middle and top; for these groups they estimate per capita consumption expenditure on cereal, non-cereal and total calorie intake for the years 1970 to 1989, 1990 to 1998 and 1998 to 2000. For the bottom income group, consumption expenditure on cereals has fallen from 0.10 per cent per annum to -1.38; it is worse for non-cereals where the consumption expenditure has decreased from 2.81 per cent per annum to 0.96 per cent per annum. The trends in calorie intake are even more dismal.

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An earlier study (Shariff and Mallick, 1999) alerted us to the emerging trends in food consumption. They noted that the Indian food basket has changed drastically since 1973-74. Both the consumption expenditure on and the quantity of food consumed indicate that the share of cereals in the food basket has decreased in rural and urban areas, while the share of other items has increased. Energy derived from food has also decreased considerably. The national council of economic and applied research (NCEAR) estimate of nutrition for rural and urban areas is less than NSSO estimates by 53 kCal. As cone moves from poorer to richer households, per capita consumption of cereals reaches a plateau whereas in rural areas as one move to better-off classes, consumption increases. Consumption is dominated by rice and wheat. Other cereals such as bajra, jowar, maize, barley and ragi are consumed only in rural areas and that too in tiny amounts. Per capita monthly consumption expenditure in rural area was Rs. 399 of which 83 per cent came from cereals and 13.6 per cent from other food items. The recommended daily intake of proteins is 60 grams per person per day of which the rural areas get barely 60 per cent. This data is for 1993-94. There is no reason to assume that the situation has improved. The situation is far worse today with rising prices of pulses and low yields of pulses, the main protein source in India.

It is well known fact that the living conditions of households are influenced by their consumption patterns. The consumption patterns vary from region to region, household to household depending upon heterogeneous economic factors. The consumption patterns would provide an insight in to the behavior of the households in allocating the total expenditure on food and non-food items. The present study has been an attempt in this direction in West Bengal. More specifically, the purpose of this study is to examine the consumption pattern of household in West Bengal.

The paper proceeds as follows. In section (II), we give a brief description of the data used. Section (III) provides methodological framework. Section (IV) provides the empirical results. Finally in section (V) the study is concluded.

DATA DESCRIPTION

The present study is based mainly on cross-section data. The required information meant for the study was collected from the primary source. The primary data on various aspects relating to the consumption patterns of the sample households were collected through the personal interview method using suitably designed pre-tested schedule/ questionnaire for the financial year 2014-2015. These sample households were selected from four blocks located in Paschim Medinipore district in West Bengal. Selected sample areas are shown in table 1. Total 400 sample households were selected for collecting the required information for the study. The selected households were stratified into marginal-income group (less than Rs.5000 per month); small-income group (Rs.5001-Rs.10,000 per month), middle-income group (Rs.10,001-Rs.15,000 per month) and high-income group (above Rs.15,000 per month) categories on the basis of there income. Thus 115 households from the marginal-income group, 150 from the small-income group, 75 from the middle-income group and 60 from the high-income group were selected for the purpose of study. The frequency distribution of the sample households according to the income group is given in table 2.

Table-1: Selected Study Areas

Sl. No	Block	No. of Sample Household Selected
1	Midnapore Sadar	100
2	Garhbeta	100
3	Jhargram	100
4	Sankrail	100

Table-2: Distribution of the Sample Households by Income Group

Income Group	Income Per Month (Rs.)	Number of Sample Households	Percentage
Marginal-income	≤5000	115	29
Small-income	5001 – 10,000	150	37
Middle-income	10,001-15,000	75	19
High-income	≥15,000	60	15
Total		400	100

The data relating to the consumption expenditure on rice, wheat, potato, pulse, chilies, onions, vegetables, mustered oil, fish and meat under food items and liquor, smoking, kerosene, bathing soaps, washing soaps, hair oil, clothing, medicines, festivals and travels under non-food items were collected from the selected sample households spread over the district.

METHODOLOGICAL FRAMEWORK

Elasticity measures the sensitivity of one variable to another. Specifically, it is a number that tells us the percentage change that will occur in one variable in response to a one per cent increase in another variable. For example, the price elasticity of demand measures the sensitivity of quantity demanded to price changes. It tells us what would be the percentage change in the quantity demanded for a good following a one per cent change in the price of that good.

The estimation of per capita expenditure elasticity requires data on per capita consumption expenditure incurred on a particular commodity and per capita total expenditure incurred on all commodities. Per capita expenditure elasticity deals with an increase in commodity groups with respect to an increase in per capita total consumption expenditure, being other thing remaining constant. The per capita expenditure elasticity can be either positive or negative. If the per capita expenditure elasticity is positive and lies between zero and unity, then quantity demanded rises by smaller percentage than per capita total expenditure implying that consumer do not spend much of any increase in total expenditure on this particular commodity. If the per capita expenditure elasticity is greater than unity, then quantity demanded rises by larger percentage than per capita total expenditure implying that quantity demanded is quite responsive to change in total expenditure. The former commodities are often called necessities and the latter luxury goods. If the commodity is inferior the per capita expenditure elasticity is negative. The classification of goods as per elasticity coefficient is presented in table 3.

Table-3: Classification of Commodities as per Expenditure Elasticity

The Elasticity Coefficient $\left(\varepsilon_E\right)$	Nature of Commodity
Positive $\left(0 < \varepsilon_E < 1\right)$	Normal and a "Necessity"
Positive $\left(\varepsilon_E > 1\right)$	Normal and a "Luxury"
Negative $\left(\varepsilon_E < 0\right)$	Inferior

The relationship between the consumption expenditure on i th item and total expenditure across the households is known as Engle curve. It is one of the well-known devices to ascertain the

consumption expenditure of different classes of consumers in a society. According to the Angle's first law, the proportion of the total expenditure declines with the increase in total expenditure on food. This led to take up innumerable studies on food as well as non-food items all round the world.

Per capita Engle function of the following type has been considered in the present study.

$$\frac{C}{X_1} = f\left(\frac{E}{X_1}\right)$$

Now, $\log\left(\frac{C}{X_1}\right) = \log b_0 + b_1 \log\left(\frac{E}{X_1}\right) + e$

where, $\frac{E}{X_1}$ is per capita consumption expenditure on food and non-food items, $\frac{E}{X_1}$ is

per capita total expenditure, b_1 is regression coefficient and e is the error term.

The derivative of $\log\left(\frac{C}{X_1}\right)$ with respect to $\dfrac{\delta \log\left(\frac{C}{X_1}\right)}{\delta \log\left(\frac{E}{X_1}\right)} = b_1$

$$\frac{\delta \log\left(\frac{C}{X_1}\right)}{\delta \log\left(\frac{E}{X_1}\right)} = b_1$$

is the per capita expenditure elasticity on food and non-food items with respect to per capita total expenditure.

EMPIRICAL RESULT

The nature of relationship between per capita expenditure on food and non-food items and per capita total expenditure by income group is examined by the methodology describe in section III. The regression results by income-group are shown in table 4.

Marginal-income Group: In case of marginal-income group, the regression result shows that the elasticity of the per capita expenditure on food items with respect to per capita total expenditure is significant and less than unity. This explains that one percent increase in total per capita expenditure leads to increase the per capita expenditure on food items by 0.88 percent. The result also shows that the regression coefficient of total per capita expenditure on non-food items is statistically significant and more than unity, showing that a one percent increase in total per capita expenditure is associated with 1.47 percent increase in per capita expenditure on non-food items.

Small-income Group: In case of small-income group, the regression result shows that the per capita expenditure elasticity on food items with respect to per capita total expenditure is significant and less than unity. The estimate shows that a one percent increase in total per capita expenditure leads to increase the per capita expenditure on food items by 0.97 percent. On the other hand, the regression coefficient of total per capita expenditure on non-food items is statistically significant

and more than unity, showing that a one percent increase in total per capita expenditure is associated with 1.44 percent increase in per capita expenditure on non-food items.

Table-4: Regression Result- Elasticity of Per Capita Expenditure on Food and Non-food Items with Respect to Per Capita Total Expenditure

Income Group	b_0	b_1	R^2
Food Item			
Marginal-income Group	0.194 (0.682)	0.882 (21.451)*	0.761
Small-income Group	0.821 (1.679)**	0.978 (11.451)*	0.857
Middle-income Group	0.158 (0.215)	0.813 (8.442)*	0.523
High-income Group	1.203 (1.664)**	0.643 (6.576)*	0.514
Non-food Item			
Marginal-income Group	-4.245 (-5.813)*	1.472 (13.468)*	0.561
Small-income Group	-3.851 (-5.932)*	1.442 (16.214)*	0.583
Middle-income Group	-2.251 (-2.843)*	1.253 (12.314)*	0.701
High-income Group	-0.906 (-4.942)*	1.086 (49.162)*	0.984

* and** significant at 1 and 5 percent level respectively

Middle-income Group: In case of middle-income group, the regression result shows that the elasticity of the per capita expenditure on food items with respect to per capita total expenditure is significant and less than unity. The result reveals that one percent increase in total per capita expenditure leads to an increase of 0.81 percent expenditure on food items. On the other hand, the regression coefficient of total per capita expenditure on non-food items is statistically significant and more than unity, showing that a one percent increase in total per capita expenditure is associated with 1.25 percent increase in per capita expenditure on non-food items.

High-income Group: In case of high-income group, the regression result shows that the elasticity of the per capita expenditure on food items with respect to per capita total expenditure is significant and less than unity. The result reveals that one percent increase in total per capita expenditure leads to an increase of 0.64 percent expenditure on food items. On the other hand, the regression coefficient of total per capita expenditure on non-food items is statistically significant and more than unity, showing that a one percent increase in total per capita expenditure is associated with 1.08 percent increase in per capita expenditure on non-food items.

CONCLUSION

The present study is a modest attempt to estimate the elasticity of per capita consumption expenditure by income group on food items and non-food items for the financial year 2014-2015 in West Bengal. This study reveals that the elasticity of per capita consumption expenditure on food items with respect to total per capita expenditure is less than unity in all income groups explaining the fact that the proportion of per capita total expenditure incurred on food items declines with the increase in total per capita expenditure across the households in all income groups. In case of non-food items, the elasticity of per capita consumption expenditure with respect to total per capita expenditure is more than unity in all income groups explaining the fact that the proportion of per capita total expenditure incurred on non-food items goes on increasing with the increase in per capita total consumption expenditure across the households in all income groups.

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