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Keywords: *food and non-food consumption expenditure, gini coefficient, lorenz curve.*

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An Analysis of Consumption Pattern in Drought-Prone Region of Western Maharashtra (India)

Dr. M. S. Deshmukh [α] & Dr. Satish Vyavahare [σ]

Abstract- This paper examines the farmer's monthly per capita consumption expenditure of food and non-food items in the dry region of western Maharashtra using the field survey data 2015-16. The present study was carried out in eighteen villages, covering 360 farmers of Atpadi and Jat block of Sangli district and Sangola and Mangalwedha block of Solapur district in western Maharashtra. Consumption is a significant activity performed by the households where in which drought significantly impacted its food consumption pattern by causing a change in the structure of food consumption baskets. The MPCE share on Jawar of small farmers (11.80%) was higher as compared to medium farmers (10.94%) and large farmers (9.74%). The share of monthly per capita consumption expenditure of milk (liquid) of large farmers (16.39%) was very high as compared to small farmers (12.41%) and medium farmers (13.07%). The monthly per capita expenditure of transport, communication & entertainment of large farmers (Rs.65) was high as compared to medium farmers (Rs.50) and small farmers (Rs.43). The monthly per capita expenditure on education of small farmers was Rs.100 (8.74%), medium farmers Rs.118 (9.35%) and the large farmers Rs.169 (11.13%). During the reference period in a study area. The average MPCE of large farmers were 1.33 times larger than the MPCE of small farmers. The distribution of consumption expenditure of all the categories of farmers were examined through frequency distribution and deciles group analysis. Lorenz curve and Gini coefficient were used to analyze the level of inequality in the distribution of consumption pattern among the sample households. The farmer's monthly per capita consumption expenditure on food items Rs. 743 (56.9%) is higher than non-food items Rs 565 (43.1%) in the sample area of western Maharashtra. Moreover, MPCE on cereals (14.65%) was highest followed by milk (13.96%) and edible oil (6.06%) in sample households of western Maharashtra. The paper finds a Gini expenditure coefficient of 0.172%, which suggest that the spending behavior of household is influenced by the income, but the inequality in the distribution of expenditures is low.

Keywords: food and non-food consumption expenditure, gini coefficient, lorenz curve.

I. Introduction

India is the second largest populous country in the world. Therefore its market potential is more than that of any countries in the world except China. India made a noteworthy change from being a supply controlled to a demand-driven economy. With a huge middle-class population, increasing local purchasing power and their rising level of affluence, it has one of the biggest consumer markets across the world and is estimated to be at par with the other Asian countries like China. India today offers remarkable market potential with a faster growth in a wide range of products. It is one of the leading economy in the world with regard to purchasing power. The personal income what we earn, from one or the other source is spent either on consumption of food and non-food *items or is unspent.* India's faster economic growth since the1990s has raised per capita income and / or expenditure has significantly impacted its food consumption patterns by causing a change in the structure of food consumption patterns observed during a pre-reforms period. Some of the Indian scholars still see that its recent economic growth as being inclusive (Bhalla 2011; Bhagwati and Panagariya 2013), a considerable larger body of work suggests that consumption, income, and wealth inequality have all mounted since the 1990s (Sen and Himanshu 2004; Subramanian and Jayaraj 2013). The consumption pattern in India is defined with the reference to the consumer expenditure survey conducted by the NSSO. These surveys divide the rural and urban population into different expenditure groups. The distribution of household/person and the per capita monthly expenditure on food and non-food items is given for each group. Hence there is relevance of looking at the block-wise composition of food and non-food consumption baskets of farmers in the drought-prone area of western Maharashtra (India).

The major aim of the paper is to examine the trends in farmer's MPCE of food and non-food items and estimate the Gini coefficient ratio in the study region. Present paper deals with the analysis of consumption expenditure pattern, both in terms of value and quantity of items consumed. It also examines whether is there any variation in the consumption expenditure of food and non-food items among the small medium and large farmers in selected drought-prone villages in western Maharashtra.

II. Research Methodology and Database

This paper is based on primary data collected from 360 respondents, from 18 villages of four blocks of the selected district (20 farmers from each sample village) of the drought-prone region of Sangli and Solapur district of western Maharashtra during 2015-16. The 120 respondents from six villages of Jat block

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(Tipehali, Gulvanchi, Dhavadwadi, Pratappur, Kosari, Birnal), 60 respondents from three villages of Atpadi block (Zare, Vibhutvadi, Pimpari) of Sangli District and 100 respondents from five villages of Sangola block (Bamani, Akola, Vasud, Sangewadi, Kadlas) and 80 respondents (Farmer's) from four villages of Mangalwedha block (Marawade, Hivargao, Khomnal, Sharadnagar) of Solapur district were interviewed through structured questionnaire and observation method.

The collected data is analyzed by using the appropriate statistical tools. The formula for estimating Gini coefficient is as below:

$$\text{Gini-coefficient} = 1 - \frac{\Sigma^{N}_{K=1} (P_K - P_{K-1}) (q_K + q_{K-1})}{N}$$

The consumption expenditure among the households is examined through frequency distribution and docile group analysis. Lorenz curve and Gini-coefficient are used to find out the level of inequality in the distribution of consumption among the sample households.

III. Result and Discussion

The consumption expenditure on food and non-food items are generally used as the key index for determining the standard of living in emerging countries. Research of sequential changes in consumption pattern, provides an understanding into the status of human capital of a nation and hence is useful in planning future investment decision. These studies play a vital role in recent years in the wake of globalization and apprehensions about food securities.

a) Classification of Farmers by Broad Groups of MPCE of Food and Non-Food Items

The table no. 1 shows the size of land holding and commodity-wise monthly per capita consumption expenditure (MPCE) on broad groups of food and non-food items. Monthly per capita consumption expenditure of jawar of small farmers is Rs. 135 (11.80%), Medium farmers Rs. 138 (10.94%) and a large farmer's Rs. 148 (9.74%). The average consumption expenditure of jawar of Sangli and Solapur district is Rs. 140 (10.83%). The share of consumption expenditure of Jawar of small farmer's is higher than the medium and large farmer's in the study area. The average MPCE of all the farmers on wheat is Rs. 28 (2.16%).

Table 1: Classification of Farmers by Broad Groups of MPCE of Food and Non-Food Items in Study Area of Western Maharashtra

(In Rs)

Items	Small Farmers	Medium Farmers	Large Farmers	Average
A) Food items				
1. Jawar	135 (11.80)	138 (10.94)	148 (9.74)	140 (10.83)
2. Wheat	27 (2.36)	28 (2.22)	29 (1.91)	28 (2.16)
3. Rice	17 (1.49)	16 (1.27)	20 (1.32)	18 (1.36)
4. Other	3 (0.26)	4 (0.32)	5 (0.33)	4 (0.30)
5. Moong	11 (0.02)	9 (0.03)	13 (0.02)	11 (0.02)
6. Urad	2 (0.17)	3 (0.24)	4 (0.26)	3 (0.23)
7. Tur	9 (0.79)	9 (0.71)	11 (0.72)	10 (0.74)
8. Other	2 (0.17)	2 (0.16)	3 (0.20)	2.33 (0.18)
9. Milk Liquid	142 (12.41)	165 (13.07)	249 (16.39)	185 (13.96)
10. Milk Products	22 (1.92)	26 (2.06)	26 (1.71)	25 (1.90)
11. Sugar	63 (5.51)	72 (5.71)	72 (4.74)	69 (5.32)
12. Salt, Procced Food	25 (2.19)	24 (1.90)	24 (1.58)	25 (1.89)
13. Edible Oil	75 (6.56)	76 (6.02)	85 (5.60)	79 (6.06)
14. Egg, Fish, Meat	36 (3.15)	40 (3.17)	54 (3.55)	44 (3.29)
15. Vegetables	48 (4.20)	47 (3.72)	45 (2.96)	47 (3.63)
16. Fruits	31 (2.71)	32 (2.54)	40 (2.63)	35 (2.63)

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17. Packaged & Processed Food	17 (1.49)	22 (1.74)	24 (1.58)	21 (1.60)
Subtotal Food (A)	665 (58.13)	713 (56.50)	852 (56.09)	743 (56.91)
B) Non Food Items				
18. Pan ,Tobacco, Intoxicants	31 (2.71)	35 (2.77)	40 (2.63)	36 (2.71)
19. Fuel, Light	34 (2.97)	41 (3.25)	46 (3.03)	40 (3.08)
20. Kerosene	11 (0.96)	10 (0.79)	9 (0.59)	10 (0.78)
21. Transport, Communication & Entertainment	43 (3.76)	50 (3.96)	65 (4.28)	53 (4)
22. Clothing, Bedding & Footwear	116 (10.14)	136 (10.78)	160 (10.53)	137 (10.48)
23. Education	100 (8.74)	118 (9.35)	169 (11.13)	129 (9.74)
24. Medical	97 (8.48)	106 (8.40)	120 (7.90)	108 (8.26)
25. Sanitary Goods, Personal Care, Cosmetics	38 (3.32)	40 (3.17)	41 (2.70)	40 (3.06)
26. Other	9 (0.79)	13 (1.03)	17 (1.12)	13 (0.98)
Subtotal Non Food (B)	479 (41.87)	549 (43.50)	667 (43.91)	565 (43.09)
Total Food & Non Food (A+B)	1144 (100)	1262 (100)	1519 (100)	1308 (100)

Note: Figures in parentheses denotes the percentage

Source: Field Survey 2015-16

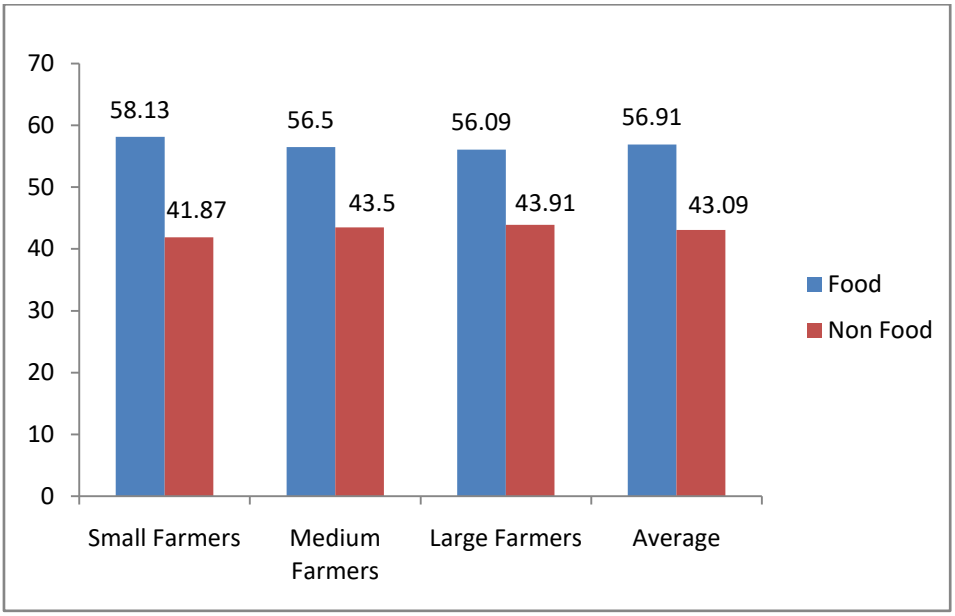

Figure 1: Size of Land Holding and MPCE on Broad Groups of Food and Non-Food Items

The monthly per capita consumption expenditure (MPCE) on milk (liquid) of small farmer's is Rs. 142 (12.41%), medium farmers Rs. 165 (13.07%) and the large farmer's Rs. 249 (16.39%). The average MPCE on rice, moong, urad, tur items of food basket of small, medium and large farmers are more or less same. The share of MPCE of large farmers on milk consumption is higher than small and medium farmers. Moreover, the MPCE on milk products, sugar, salt and processed food, edible oil, egg, fish, meat, vegetables and fruits is perpetual. Average monthly per capita consumption expenditure on pan, tobacco and intoxicant items of all categories of farmers is Rs. 35 (2.71%). However, MPCE on transport, communication & entertainment of the large farmers is Rs. 65 (4.28%), which is higher than the medium farmers is Rs. 50 (3.96%) and small farmers is Rs. 43 (3.76%).

The average MPCE on clothing, bedding and footwear of all categories of farmers is constant. MPCE on education of small farmers is Rs. 100 (8.74%), medium farmers is Rs. 118 (9.35%) and the large farmer is Rs. 169 (11.13%). MPCE on the education with variation in the size of holding, i.e. larger the size more the expenditure and smaller the size lesser the expenditure. MPCE on medical, sanitary goods personal care and cosmetics of all the categories of farmers is

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more or less same. Monthly per capita consumption expenditure (MPCE) on food items of small farmers is Rs. 665 (58.13%), medium farmers Rs. 713 (56.50%) and a large farmer is Rs. 852 (56.09). However, the average monthly per capita consumption expenditure (MPCE) on non-food items of small farmers is Rs. 479 (41.87%), medium farmers Rs. 549 (43.50%) and the large farmers Rs. 667 (43.91%). Moreover,, the monthly per capita consumption expenditure (MPCE) on food items (56.9%) is higher than that of non-food items (43.1%). It is thus evident that the MPCE on cereals (14.65%) which is highest followed by milk (13.96%) and edible oil (6.06%) in sample households of western Maharashtra during the study period.

b) Commodity-Wise Monthly Per Capita Consumption Expenditure (MPCE) by Social Groups

Table no. 2 shows the commodity-wise monthly per capita consumption expenditure of food and non-food items by social groups. Monthly per capita consumption expenditure on jawar of general category farmers is Rs. 143 (10.44%), OBC category farmers Rs. 134 (11.05%) and SC category farmers 137 (12.89%). The average MPCE on jawar of Sangli and Solapur district is Rs. 138 (11.46%). The share of MPCE on Jawar of SC category farmers is higher as compared to OBC and general category farmers. Monthly per capita consumption expenditure on wheat of general category farmers is Rs. 31 (2.26%), OBC category farmers Rs. 24 (1.98%) and SC category farmers 26 (2.45%). The average MPCE on wheat is Rs. 27 (2.23%). The average MPCE on rice, moong, urad, tur commodity in general, OBC and SC category farmers is constant.

Table 2: Commodity-wise MPCE by Social Groups in the Study Area

(In Rs)

Items	General	OBC	SC	Average
A) Food items				
1. Jawar	143 (10.44)	134 (11.05)	137 (12.89)	138 (11.46)
2. Wheat	31 (2.26)	24 (1.98)	26 (2.45)	27 (2.23)
3. Rice	18 (1.31)	15 (1.24)	16 (1.51)	16 (1.35)
4. Other	5 (0.36)	3 (0.25)	3 (0.28)	4 (0.30)
5. Moong	11 (0.03)	10 (0.02)	11 (0.03)	11 (0.02)
6. Urad	3 (0.22)	3 (0.25)	2 (0.19)	3 (0.22)
7. Tur	10 (0.73)	9 (0.74)	7 (0.66)	9 (0.71)
8. Other	3 (0.22)	2 (0.16)	2 (0.19)	2 (0.19)
9. Milk Liquid	184 (13.43)	175 (14.43)	150 (14.11)	170 (13.99)
10. Milk Products	27 (1.97)	24 (1.98)	18 (1.69)	23 (1.88)
11. Sugar	74 (5.40)	64 (5.28)	59 (5.55)	66 (5.41)
12. Salt, Procced Food	25 (1.82)	23 (1.90)	22 (2.07)	23 (1.93)
13. Edible Oil	79 (5.77)	75 (6.18)	75 (7.06)	76 (6.33)
14. Egg, Fish, Meat	45 (3.28)	41 (3.38)	31 (2.92)	39 (3.19)
15. Vegetables	47 (3.43)	48 (3.96)	41 (3.86)	45 (3.75)
16. Fruits	35 (2.55)	34 (2.80)	30 (2.82)	33 (2.73)
17. Packaged & Processed Food	22 (1.61)	19 (1.57)	17 (1.60)	19 (1.59)
Subtotal Food (A)	762 (55.62)	703 (57.96)	647 (60.87)	704 (58.15)
B) Non Food items				
18. Pan ,Tobacco, Intoxicants	36 (2.63)	36 (2.97)	27 (2.54)	33 (2.71)
19. Fuel, light	46 (3.36)	34 (2.80)	31 (2.92)	37 (3.03)
20. Kerosene	10 (0.73)	10 (0.82)	11 (1.03)	10 (0.86)
21. Transport, Communication & Entertainment	57 (4.16)	46 (3.79)	36 (3.39)	46 (3.78)
22. Clothing, Bedding & Footwear	143 (10.44)	129 (10.63)	112 (10.54)	128 (10.54)
23. Education	151 (11.02)	94 (7.75)	78 (7.34)	107 (8.70)

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24. Medical	109 (7.96)	111 (9.15)	82 (7.71)	100 (8.27)
25. Sanitary Goods, Personal Care, Cosmetics	42 (3.07)	38 (3.13)	32 (3.01)	37 (3.07)
26. Other	14 (1.02)	12 (0.99)	7 (0.66)	11(0.89)
Subtotal Non Food (B)	608 (44.38)	510 (42.04)	416 (39.13)	511 (41.85)
Total Food & Non Food (A+B)	1370 (100)	1213 (100)	1063 (100)	1215 (100)

Note: Figures in parentheses denoted the percentage
Source: Field Survey, 2015-16

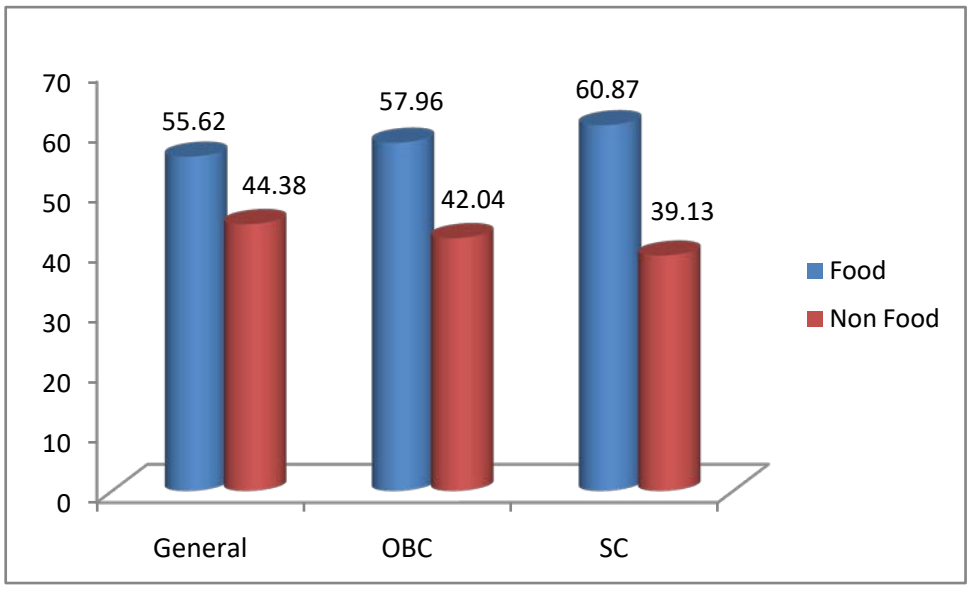

Figure 2: Commodity-wise MPCE by Social Groups in the Study Area

The monthly per capita consumption expenditure on milk (liquid) of SC category farmers is Rs. 150 (14.11%), OBC category farmers Rs. 175 (14.43%) and the general category farmers Rs. 184 (13.43%). It shows that the share of OBC category farmers MPCE on milk consumption is higher than the SC and general category farmers. Monthly per capita consumption expenditure on milk product, sugar, salt, processed food, edible oil, egg, fish, meat, vegetables, fruits is constant. The average monthly per capita consumption (MPCE) on pan, tobacco and intoxicant items of all categories of farmers is Rs.33 (2.71%). MPCE on transport, communication & entertainment in the general category farmers is Rs.57 (4.16%), OBC category farmers Rs.46 (3.79%) and SC category farmers Rs.43 (3.39%). The share of MPCE on transport, communication & entertainment items of general category farmers is more than the OBC and SC category farmers. Average monthly per capita expenditure on clothing, bedding and footwear of all categories of farmers is constant. The MPCE on education in general category farmers is Rs.151 (11.02%), OBC category farmers Rs.94 (7.75%) and the SC category farmers is Rs.78 (7.34%). The MPCE on the education in general category farmers is more as compared to OBC and SC category farmers. The MPCE on medical, sanitary goods personal care and cosmetics of all categories of farmers is constant. Monthly per capita consumption expenditure on food items of SC category farmers is Rs.647 (60.87%), OBC category farmers Rs.703 (57.96%) and general category farmers Rs.762 (55.62%). The average monthly per capita consumption expenditure of non food items of SC category farmers is Rs.416 (39.13%), OBC category farmers Rs.510 (42.04%) and the general category farmers Rs.608 (44.38%). The average share of MPCE of all the farmers by social groups on food items is Rs. 704 (58.15%) and non-food item is Rs.511 (41.85%) in the study area of Sangli and Solapur district.

c) *MPCE of Food and Non-Food Items by Level of Education in the Study Area*

The table no.3 reveals the commodity-wise monthly per capita consumption expenditure on broad groups of food and non-food items by educational level of the farmers in study area. Monthly per capita consumption expenditure on jawar of illiterate farmers is Rs.137 (11.13%), primary educated farmers Rs.135 (10.91%), secondary educated farmers Rs.145 (11.23%), and higher secondary educated farmers Rs.145 (10.80%). It is clear that there is an inverse relationship between MPCE on jawar and level of

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education. The average MPCE by the level of education on jawar of Sangli and Solapur district is Rs.140 (10.39%). Moreover, the average MPCE on rice, moong, urad and tur items in all farmers is constant.

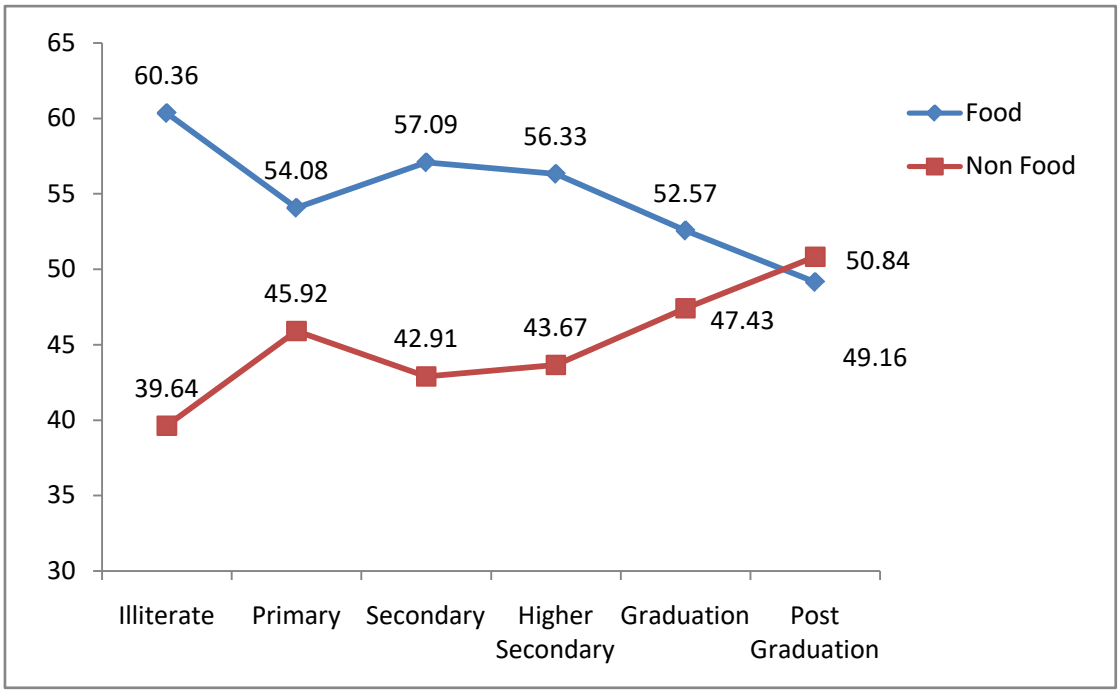

Figure 3: MPCE of Food and Non-Food Items by Educational Level in the Study Area

Table 3: MPCE of Food and Non-Food Items by Educational Level in the Study Area

(In Rs)

Items	Illiterate	Primary	Secondary	Higher Secondary	Graduation	Post Graduation	Average
A) Food items							
1. Jawar	137(11.13)	135(10.91)	145 (11.23)	145 (10.80)	143 (10.06)	137 (8.18)	140 (10.39)
2. Wheat	27 (2.19)	25 (2.02)	29 (2.25)	27 (2.01)	39 (2.74)	37 (2.21)	31 (2.24)
3. Rice	15 (1.22)	16 (1.29)	19 (1.47)	18 (1.34)	19 (1.34)	25 (1.49)	19 (1.36)
4. Other	2 (0.16)	4 (0.32)	5 (0.39)	4 (0.30)	9 (0.63)	6 (0.36)	5 (0.36)
5. Moong	10 (0.01)	10 (0.03)	12 (0.03)	11 (0.02)	9 (0.04)	16 (0.02)	11 (0.03)
6. Urad	1 (0.08)	3 (0.24)	4 (0.31)	4 (0.30)	2 (0.14)	2 (0.12)	3 (0.20)
7. Tur	9 (0.73)	9 (0.73)	9 (0.70)	11 (0.82)	7 (0.49)	12 (0.72	10 (0.70)
8. Other	2 (0.16)	2 (0.16)	2 (0.15)	2 (0.15)	3 (0.21)	6 (0.36)	3 (0.20)
9. Milk Liquid	210(17.06)	127(10.27)	192 (14.87)	173 (12.89)	141 (9.92)	172 (10.27)	169 (12.55)
10. Milk Products	25 (2.03)	26 (2.10)	22 (1.70)	24 (1.79)	28 (1.97)	36 (2.15)	27 (1.96)
11. Sugar	67 (5.44)	71 (5.74)	66 (5.11)	67 (4.99)	86 (6.05)	81 (4.84)	73 (5.36)
12. Salt, Procced Food	24 (1.95)	24 (1.94)	24 (1.86)	24 (1.79)	25 (1.76)	28 (1.67)	25 (1.83)
13. Edible Oil	73 (5.93)	77 (6.22)	79 (6.12)	81 (6.04)	87 (6.12)	92 (5.50)	82 (5.99)
14. Egg, Fish, Meat	40 (3.25)	41 (3.31)	38 (2.94)	51 (3.80)	38 (2.67)	63 (3.76)	45 (3.29)
15. Vegetables	47 (3.82)	47 (3.80)	44 (3.41)	49 (3.65)	49 (3.45)	46 (2.75)	47 (3.48)
16. Fruits	34 (2.76)	32 (2.59)	29 (2.25)	41 (3.06)	36 (2.53)	40 (2.39)	35 (2.60)
17. Packaged & Processed Food	20 (1.62)	20 (1.62)	18 (1.39)	24 (1.79)	26 (1.83)	24 (1.43)	22 (1.61)
18. Subtotal Food (A)	743(60.36)	669(54.08)	737 (57.09)	756 (56.33)	747 (52.57)	823 (49.16)	746 (54.93)
B) Non Food Items							
19. Pan,Tobacco, Intoxicants	38 (3.09)	33 (2.67)	28 (2.17)	44 (3.28)	30 (2.11)	39 (2.33)	35 (2.61)
20. Fuel, Light	34 (2.76)	42 (3.40)	43 (3.33)	38 (2.83)	58 (4.08)	58 (3.46)	46 (3.31)
21. Kerosene	10 (0.81)	10 (0.81)	11 (0.85)	10 (0.75)	11 (0.77)	12 (0.72)	11 (0.78)

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22. Transport, Communication & Ent.	44 (3.57)	52 (4.20)	54 (4.18)	56 (4.17)	53 (3.73)	70 (4.18)	55 (4.01)
23. Clothing, Bedding & Footwear	129(10.48)	131(10.59)	134 (10.38)	145 (10.80)	150 (10.56)	165 (9.86)	142 (10.44)
24. Education	85 (6.90)	144(11.64)	109 (8.44)	135 (10.06)	227 (15.97)	298 (17.80)	166 (11.80)
25. Medical	101 (8.20)	105 (8.49)	121(9.37)	99 (7.38)	92 (6.47)	139 (8.30)	110 (8.04)
26. Sanitary Goods, Personal Care, Cosm.	37 (3.01)	39 (3.15)	40 (3.10)	43 (3.20)	36 (2.53)	47 (2.81)	40 (2.97)
27. Other	10 (0.81)	12 (0.97)	14 (1.08)	16 (1.19)	17 (1.20)	23 (1.37)	15 (1.10)
Subtotal Non Food (B)	488(39.64)	568(45.92)	554 (42.91)	586 (43.67)	674 (47.43)	851 (50.84)	620 (45.07)
Total Food & Non Food (A+B)	1231 (100)	1237(100)	1291 (100)	1342 (100)	1421 (100)	1674 (100)	1366 (100)

Note: Figures in parentheses denoted the percentage
Source: Field Survey, 2015-16

The average MPCE on clothing, bedding, medical, sanitary goods personal care, cosmetics and footwear of all categories of farmers in this group is constant. Monthly per capita consumption expenditure (MPCE) on food items of illiterate farmers is Rs.743 (60.36%), primary educated farmers Rs.669 (54.08%), secondary educated farmers Rs.737 (57.09%), graduate farmers Rs.747 (52.57%) and post graduate farmers Rs.823 (49.16%). The monthly per capita consumption expenditure on non food items of illiterate farmers is Rs.488 (39.64%), primary educated farmers Rs.568 (45.92%), secondary educated farmers Rs.554 (42.91%), graduate farmers Rs.674 (47.43%), and post graduate farmers Rs.851 (50.84%). The share of average MPCE on food items by educational level of the farmers is Rs.746 (54.93%) and a non-food item Rs.620 (45.07%). It is clear that as the level of education improves the MPCE on non-food items also increases among all the farmer in the study region. The MPCE of a highly educated farmer of food items (49.16%) is lesser than non-food expenditure (50.84%).

d) Taluka / Block-Wise MPCE of Food and Non-Food Items in the Sample Area

The table no. 4 shows the taluka-wise monthly per capita consumption expenditure (MPCE) on broad groups of food and non-food items in drought-prone area of Sangli and Solapur district in western Maharashtra. The MPCE on jawar of Jat taluka is Rs.145 (11%), Atpadi taluka Rs.125 (10%), Sangola taluka Rs.133 (10%) and Mangalwedha taluka Rs150 (12%) respectively.

Table 4: Taluka/Block Wise MPCE of Food and Non-Food Items in Sample Area

(In Rs)

MPCE	Jat (1)	Atpadi (2)	Sangli* (3=1+2)	Sangola (4)	Mangalwedha (5)	Solapur* (6=4+5)
A) Food items						
1. Jawar	145 (11)	125 (10)	135 (11)	133 (10)	150 (12)	141 (11)
2. Wheat	26 (2)	21 (2)	24 (2)	37 (3)	25 (2)	31 (2)
3. Rice	15 (1)	16 (1)	16 (1)	19 (1)	19 (2)	19 (1)
4. Other	3 (0)	4 (0)	4 (0)	6 (0)	3 (0)	4 (0)
5. Moong	9 (1)	12 (1)	10 (1)	11 (1)	13 (1)	12 (1)
6. Urad	2 (0)	4 (0)	3 (0)	3 (0)	3 (0)	3 (0)
7. Tur	9 (1)	8 (1)	8 (1)	9 (1)	11 (1)	10 (1)
8. Other	2 (0)	2 (0)	2 (0)	3 (0)	2 (0)	2 (0)
9. Milk Liquid	267 (21)	118 (21)	193 (21)	123 (21)	152 (21)	137 (21)
10. Milk Products	25 (2)	22 (2)	23 (2)	27 (2)	25 (2)	26 (2)
11. Sugar	61 (5)	67 (5)	64 (5)	84 (6)	635 (5)	74 (6)
12. Salt, Procced Food	22 (2)	24 (2)	23 (2)	27 (2)	25 (2)	26 (2)
13. Edible Oil	80 (6)	73 (6)	77 (6)	76 (6)	79 (6)	77 (6)
14. Egg, Fish, Meat	41 (3)	51 (4)	46 (4)	37 (3)	43 (3)	40 (3)

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15. Vegetables	42 (3)	50 (4)	46 (4)	53 (4)	43 (4)	48 (4)
16. Fruits	30 (2)	41 (3)	35 (3)	35 (3)	33 (3)	34 (3)
17. Packaged & Processed Food	17 (1)	22 (2)	20 (2)	24 (2)	20 (2)	22 (2)
Subtotal Food (A)	797 (63)	659 (53)	728 (58)	704 (53)	708 (57)	706 (55)
B) Non Food Items						
18. Pan ,Tobacco, Intoxicants	36 (3)	42 (3)	39 (3)	33 (2)	31 (2)	32 (2)
19. Fuel, Light	35 (3)	35 (3)	35 (3)	52 (4)	37 (3)	44 (3)
20. Kerosene	9 (1)	11 (1)	10(1)	11 (1)	10 (1)	11 (1)
21. Transport, Communication & Entertainment	45 (4)	49 (4)	47 (4)	60 (4)	50 (4)	55 (4)
22. Clothing, Bedding & Footwear	136 (11)	123 (10)	130 (10)	139 (10)	135 (11)	137 (11)
23. Education	74 (6)	123 (10)	99 (8)	187 (14)	117 (9)	152 (12)
24. Medical	88 (7)	152 (12)	120 (10)	99 (7)	109 (9)	104 (8)
25. Sanitary Goods, Personal Care, Cosmetics	35 (3)	44 (4)	40 (3)	42 (3)	39 (3)	40 (3)
26. Other	13 (1)	13 (1)	13 (1)	13 (1)	12 (1)	13 (1)
Subtotal Non Food (B)	471 (37)	593 (47)	532 (42)	635 (47)	541 (43)	588 (45)
Subtotal Food & Non Food (A+B)	1269(100)	1252(100)	1260(100)	1340(100)	1249 (100)	1294 (100)

*Note: Figures in parentheses denote the percentage, *= denote Average*
Source: Field Survey, 2015-16

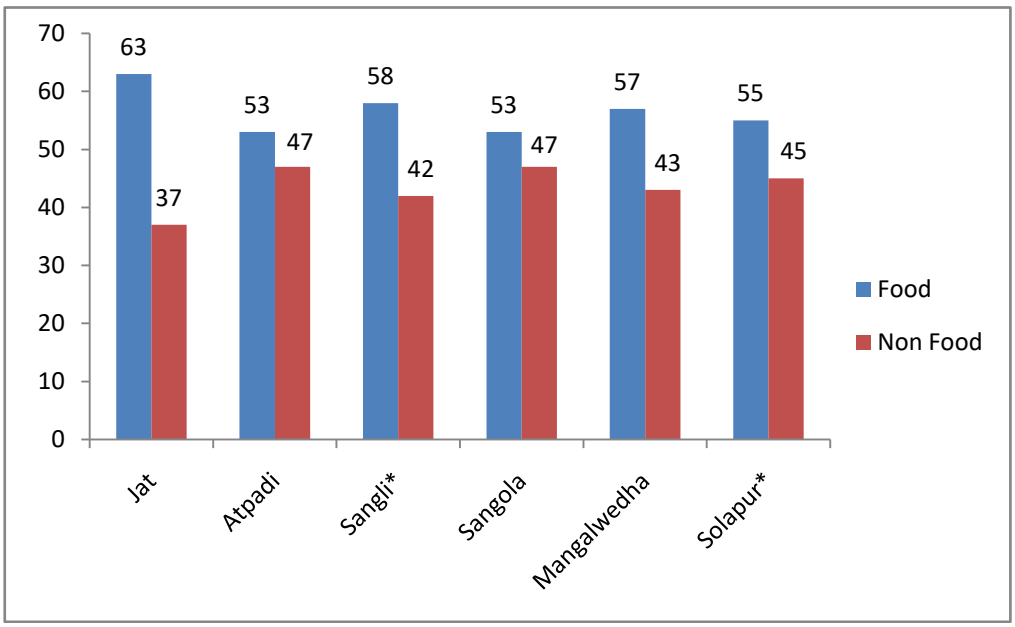

Figure 4: Taluka/Block-Wise Share of MPCE of Food and Non-Food Items in the Study Area

The average MPCE on Jawar in Sangli and Solapur districts farmers is Rs.135 (11%) and 141 (11%) respectively. The average MPCE on wheat of Sangli and Solapur districts is Rs.24 (2%) and Rs.31 (2%) respectively. However, the average monthly per capita consumption expenditure on rice, moong, urad, tur, milk liquid and products, sugar, salt, processed food and edible oil consuming farmers of all block is constant. The MPCE of food items of Jat taluka is Rs.797 (63%), Atpadi taluka Rs.659 (53%), Sangola taluka Rs.704 (53%) and Manglwedha taluka Rs.708 (57%). The share of monthly per capita consumption expenditure of transport, communication & entertainment in the all talukas of study area is constant. Moreover, average MPCE on clothing, bedding and footwear of Jat taluka is Rs.136 (11%), Atpadi taluka Rs.123 (10%), Sangola

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taluka Rs.139 (10%) and Mangalwedha taluka Rs.135 (11%). Similarly, MPCE on education in Jat, Atpadi, Sangola and Mangalwedha taluka is Rs.74 (6%), Rs.123 (10%), Rs.187 (14%) and Rs.117 (9%) respectively. The MPCE on education in Sangola taluka is high as compared to other talukas in the study area. The average monthly per capita consumption expenditure (MPCE) on non-food items of Jat taluka is Rs.471 (37%), Atpadi taluka Rs.593 (47%), Sangola taluka Rs.635 (47%) and the Manglwedha taluka Rs.541 (43%) in sample area of the study.

e) Size of Holding and Variation in Monthly Per Capita Consumption Expenditure

The variation of average monthly per capita consumption expenditure (regarding the number of times) among the different types of households of farmers is shown in the table number five.

Table 5: Variation of Average Monthly Per Capita Consumption Expenditure by Size of Holding

Sr. No.	Types of Farmers	Small (1144)	Medium (1262)	Large (1519)
1	Small (1144)	0	1.10	1.33
2	Medium (1262)	1.10	0	1.20
3	Large (1519)	1.33	1.20	0

Note: Figures in parentheses denote the average monthly consumption expenditure (MPCE) of households of various categories of farmers

Source: Field Survey, 2015-16

It is observed from the table number five matrix that the average monthly per capita consumption expenditure of medium farmers is 1.10 times of the small farmers. Moreover, the average monthly per capita consumption expenditure of large farmers is 1.33 times of small farmers.

f) Gini Coefficient Index and Lorenz Curve Analysis of Sample Households by MPCE

The level of inequality in the distribution of MPCE among the households is analyzed with the help of the Lorenz curve. The cumulative percentage of the households and cumulative percentage of MPCE of households on food and non-food items, if it is the same, it could be inferred that there is equality in the distribution of MPCE. Table no. 6 shows that 36 households (10 percent) account for just 6.39 percent of MPCE. Moreover, 72 households (20 percent) accounts for 13.72 percent of MPCE.

Table 6: Gini coefficient Index by the distribution of MPCE in the Sample Households

MPCE Range	No. of Households	Cumulative No. of Households	MPCE	Cumulative MPCE	Cumulative % of Households	Cumulative % of MPCE
up to 895	36	36	29469	29469	10	6.39
895 to 975	36	72	33818	63287	20	13.72
975 to 1042	36	108	36404	99691	30	21.61
1042 to 1090	36	144	38510	138201	40	29.96
1090 to 1164	36	180	40765	178966	50	38.80
1164 to 1250	36	216	43259	222225	60	48.18
1250 to 1360	36	252	46824	269049	70	58.33
1360 to 1505	36	288	51788	320837	80	69.56
1505 to 1855	36	324	59738	380575	90	82.51
above 1855	36	360	80649	461224	100	100
Individual	% of Households		Cumulative % of MPCE		Area Under Lorenz	
0	0		0		-	
1	0.1		0.06		0.003	
2	0.2		0.14		0.0095	
3	0.3		0.22		0.017	
4	0.4		0.30		0.025	
5	0.5		0.39		0.0335	

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6	0.6	0.48	0.043
7	0.7	0.58	0.053
8	0.8	0.70	0.0635
9	0.9	0.83	0.0755
10	1	1	0.091
Total	-	-	0.414
Area A =	0.086		
Gini =	0.172		

Source: Field Survey, 2015-16

Similarly, 180 households (50 percent) accounts for only 38.80 percent of MPCE. It is clear that there is inequality in the distribution of average MPCE on food and non-food items. The figure five indicates that the curve is a little away from the egalitarian line hence the level of inequality in the distribution of MPCE among the groups of farmers is very low. Gini coefficient or Gini index of concentration gives numerical expression of the results achieved from the Lorenz curve. Suppose, there is perfect equality in the distribution of MPCE, the Gini Coefficient will be zero, and it will be one if there is perfect inequality.

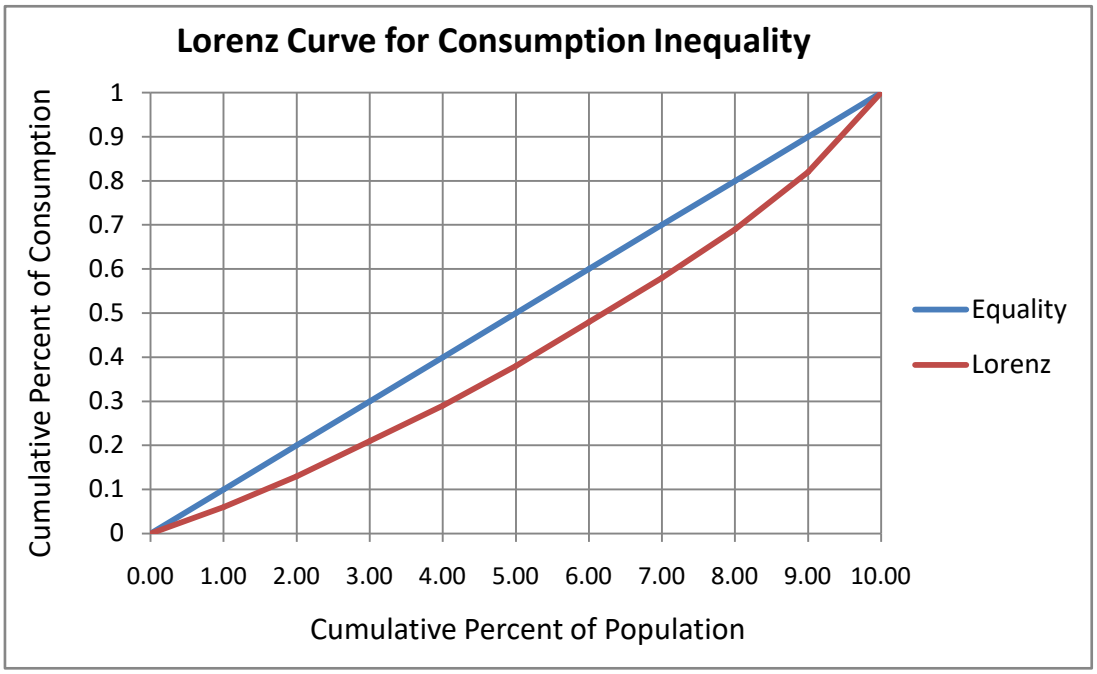

Figure 5: Lorenz Curve for the Distribution of MPCE among the Sample Households in the study Area

The Lorenz curve is constructed by plotting the cumulative percentage of MPCE of broad groups of food and non-food items against the cumulative percentage of households. The value of Gini coefficient ranges from zero to one. The lower Gini ratio implies a reduction in inequality. Present study states that in the study area Gini coefficient of MPCE is 0.172, which indicates that the inequality in the distribution of expenditures is lower. Certain components of expenditure as entertainment, transportation, furnishing, and equipment constitute a small proportion of average household expenditure and therefore have a probability almost one to be distributed unevenly among the population. So it may be concluded that the level of inequality in the distribution of MPCE among the sample households of Sangli and Solapur districts is low.

IV. Conclusion and Policy Implications

The monthly per capita consumption expenditure (MPCE) of food items is higher than the non-food items at almost all level. By classification of farmers into small medium and large expenditure on cereals was the major item of food expenditure i.e. 57%. The monthly per capita expenditure on jowar (10.83%), milk (13.96%) both these items were more than 24.89% and edible oil (6.06%). Monthly per capita consumption expenditure (MPCE) on cereals was 14.65% in the sample households of western Maharashtra. The share of these products in the total expenditure is higher during the period. But high prices are acting as a constraint in the consumption of value-added products. The purchasing power of people is highly influenced by

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the changing the life styles, the standard of living, modernization and growing employment opportunities, etc. Monthly per capita consumption expenditure (MPCE) on food items of scheduled caste category farmers was Rs.647 (60.87%), OBC category farmers Rs.703 (57.96%) and general category farmers Rs.762 (55.62%) during the study period. The MPCE of highly educated farmers on food items (49.16%) was lesser than non-food expenditure (50.84%). Increase in the level of education led to increase in monthly per capita consumption expenditure on non-food items. The MPCE varies according to blocks, but expenditure on non-food items was lesser than the food items in all the major blocks of the study area. The 20 percent of households account for 13.72 percent of monthly per capita consumption expenditure with Gini coefficient as 0.172. So it is concluded that the level of inequality in the distribution of monthly per capita consumption expenditure (MPCE) among the sample households of Western Maharashtra was Moderate.

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