

**AN ECONOMIC ANALYSIS OF
CONSUMPTION PATTERNS AND POVERTY IN INDIA**

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Economics

By

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DECLARATON

I declare that the present thesis entitled “An Economic Analysis of Consumption Patterns and Poverty in India” is a consolidation of original work which has been carried out by me under the guidance of Prof. Pranab Mukhopadhyay, Department of Economics, Goa University, and that the same has not been submitted to any university or institute for the award of any degree, diploma or other such title.

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GLOSSARY

BPL	–	Below Poverty Line
CARG	–	Compound Annual Rate of Growth
CES	–	Consumption Expenditure Survey
CPIAL	–	Consumer Price Index of Agricultural Labour
CPIIW	–	Consumer Price Index of Industrial Workers
DCs	–	Developing Countries
DPCE	–	Daily Per capita Consumption Expenditure
FAO	–	Food and Agriculture Organization
FGT	–	Foster Greer Thorbecke
GDP	–	Gross Domestic Product.
GE	–	General Entropy
GOI	–	Government of India
HCE	–	Household Consumption Expenditure
HCR	–	Head Count Ratio
HH	–	Households
HHS	–	Household Size
IHDS	–	Indian Human Development Survey
KDE	–	Kernel Density Estimate

LES	–	Linear Expenditure System
LPG	–	Liquid Petroleum Gas
MANOVA	–	Multivariate Analysis of Variance
MOSPI	–	Ministry of Statistics and Programme Implementation
MP	–	Madhya Pradesh
MPCE	–	Monthly per capita Consumption Expenditure
MRP	–	Mixed Recall Period
NFEC/AEC	–	Non-Formal Education Courses/Adult Education Centres
NNP	–	Net National Product
NSSO	–	National Sample Survey Organization
OBCs	–	Other Backward Castes
PC	–	Planning Commission
PCCC	–	Per Capita Cereal Consumption
PCCE	–	Per capita Cereal Consumption Expenditure
PCI	–	Per Capita Income
PCTE	–	Per capita Total Consumption Expenditure
PG	–	Poverty Gap
PGI	–	Poverty Gap Index
PL	–	Poverty Line

PLB	–	Poverty Line Basket
PPP	–	Purchasing Power Parity
QES	–	Quadratic Expenditure System
R	–	Rural
RBI	–	Reserve Bank of India
RDA	–	Required Daily Allowance
RMPCE	–	Real Monthly Per capita household Consumption Expenditure
SCs	–	Scheduled Castes
SPG	–	Squared Poverty Gap
STs	–	Scheduled Tribes
TC	–	Tendulkar Committee
TLC	–	Total Literacy Campaign
TN	–	Tamil Nadu
U	–	Urban
UDCs	–	Under Developed Countries
URP	–	Uniform Recall Period
UTs	–	Union Territories
VCP	–	Vicious Circle of Poverty
WPI	–	Wholesale Price Index

Contents

Chapter 1 Introduction	1
1.1 Macro-economic aggregates.....	1
1.2 Indian Economy: Income and Consumption Scenario	2
1.3 Consumption Expenditure	3
1.4 Household Consumption in India.....	3
1.5 Objectives.....	5
1.6 Research Gap.....	5
1.7 Chapter Scheme	5
Chapter 2 Literature Review	8
2.1 Introduction	8
2.2 Consumption pattern and inequalities	8
2.3 Poverty Estimates.....	14
2.4. Conclusion and the need for more research on poverty in India.....	30
Chapter 3 Data and Research Methodology	32
3.1 Introduction	32
3.2 Objectives of consumer expenditure surveys	32
3.3. Period of study	33
3.4 Data source.....	33
3.5 Reference period or Recall period.....	33
3.6. Item basket	34
3.7 Sample size	36
3.8 Research Questions	36
3.9 Methodology for MPCE comparison	37
3.10 NSSO data concepts	38
3.11 Poverty estimates.....	39
3.12 Relationship between inequality, poverty and per capita consumption	39
3.13 Inequality.....	39
3.14 A Comparative Analysis of MPCE - Proportion and Growth	40
3.15 MPCE Variation in Social Group and Religion	41
3.16 MPCE Variation in rural and urban sectors at four rounds in India and Goa.....	42
3.17 Inequality Decomposition	42
3.18 Poverty Decomposition	44

Chapter 4 India's Poverty Estimate – a Review	47
4.1 Introduction	47
4.2 Various poverty estimates	48
4.3 Major Non-official poverty estimates.....	51
4.4 Major official poverty estimates	54
4.5 Rate of Decline of poverty in India	58
4.6 Poverty estimates for Goa and India.....	59
4.7 Poverty Decomposition.....	59
4.8 Conclusion.....	63
Chapter 5 Transition in India's Consumption patterns	65
5.1 Introduction	65
5.2 Primary Source of energy for cooking.....	65
5.3 Primary source of energy for lighting.....	67
5.4 Household type	68
5.5 Sex wise distribution	70
5.6 Marital status	70
5.7 Dwelling Unit	71
5.8 General Education	71
5.9 Religion.....	72
5.10 Social Group	73
5.11 Distribution of households according MPCE class	75
5.12 Monthly per capita Consumption Expenditure (MPCE) on Different Commodities and Services	75
5.13 Major Food items	77
5.14 Major Non-food items.....	81
5.15 Food - non-food expenditure & Total MPCE.....	91
5.16 Application of Engel's Law and Kernel density curves in India's consumption patterns	92
5.17 MPCE Variation in Rural and Urban Sectors at Different Rounds in India - A Detailed summary analysis.....	94
5.18 MPCE Variation in Rural and Urban Sectors in India	99
5.19 MPCE Variation in Social Group and Religion in India	100
5.20 Conclusion.....	102
Chapter 6 A Comparative Analysis of Consumption	105
6.1 Introduction	105
6.2 Major Food & Non-food Items. (Median)	106
6.3 MPCE classified in lower, medium and upper ranges.....	106

6.4 Comparison of MPCE range in 8 states.....	107
6.5 Food and non-food expenditure proportions	123
6.6 Expenditure inequality among selected states	127
6.7 Conclusion.....	130
Chapter 7 Consumption Inequality in India.....	132
7.1 Introduction	132
7.2 Consumption inequality	132
7.3: Decomposition of Consumption inequality.....	133
7.4 Rural Household Expenditure – total expenditure and food proportion.....	146
7.5 Urban Household Expenditure – total expenditure and food proportion.....	148
7.6 A Model of Consumption Expenditure.....	149
7.7 Conclusion.....	157
Chapter 8 Consumption, inequality and poverty in Goa.....	159
8.1 Introduction	159
8.2 Data Source	159
8.3 Objectives.....	160
8.4 Methodology.....	160
8.5 Distribution of households according MPCE class.....	160
8.6 MPCE & Poverty (Author’s Estimate)	161
8.7 MPCE in Goa.....	161
8.5 Poverty.....	168
8.8 Consumption inequality	170
8.9 MPCE Variation in Rural and Urban Sectors in Goa	171
8.10 MPCE Variation among Social Group and across Religion in Goa	173
8.11 Conclusion.....	175
Chapter 9 Major Findings and Conclusion.....	177
9.1. Major Findings.....	177
9.2 Contribution and Conclusion of the study.....	185
References.....	186

List of Tables

Table 1: Reference period in four rounds under study	34
Table 2: Composition of items in four rounds under study	35
Table 3: Number of Households: India and Goa	36
Table 4: Price Index used to derive MPCE in constant prices	38
Table 5: Percentage increase in deflator (Rural & Urban) over previous rounds.....	38
Table 6: Summary of major poverty estimates	49
Table 7: Planning Commission's estimates 1973-74, 1983-84 and 1993-94)	55
Table 8: Poverty estimates based on the 55th NSS round (1999-2000) (Per cent).....	55
Table 9: Poverty Estimates for 1993-94 and 2004-05.....	57
Table 10: Compound Annual Growth Rates in Poverty 1993-94 to 2011-12.....	58
Table 11: Poverty rate in India and Goa.....	59
Table 12: Poverty Decomposition using FGT measures.....	62
Table 13: Primary Source of energy for cooking (Per cent).....	66
Table 14: Primary Source of energy for cooking, MPCE (Rs.) at constant prices.....	66
Table 15: Primary Source of energy for lighting. (Per cent)	67
Table 16: Expenditure on Primary Source of energy for lighting, MPCE (Rs.) at constant prices.	67
Table 17: Distribution of Household by Employment Type (Per cent)	69
Table 18: MPCE of Household Types at constant prices (Rs.).....	69
Table 19: Sex-wise distribution (Per cent)	70
Table 20: Marital status (Per cent).....	70
Table 21: Dwelling Unit (Per cent).....	71
Table 22: General education (Per cent).....	72
Table 23: Religion (Per cent).....	72
Table 24: MPCE at constant prices (in Rs.) by Religion.....	73
Table 25: Difference in MPCE at constant prices (in Rs.), by Religion between 66th and 50th round.	73
Table 26: Social Group (Per cent)	74
Table 27: MPCE of Social Groups at constant prices (Rs.).....	74
Table 28: Distribution of Households according to MPCE (per cent).....	75
Table 29: MPCE (Rural) in Rs. at constant prices.....	85
Table 30: MPCE (Urban) in Rs. at Constant prices.....	86
Table 31: Proportion of expenditure to the total MPCE (Per cent)	87
Table 32: Growth in MPCE from 50th to 66th round at constant prices.....	88
Table 33: Growth in MPCE Rural between rounds at constant prices.....	88
Table 34: Growth in MPCE Urban in four rounds at constant prices.....	89
Table 35 : Food - non-food expenditure & Total MPCE (Constant prices)	91
Table 36: MPCE (last 30 days)	95
Table 37: MPCE (last 30 days)	95
Table 38: MPCE (last 30 days)	96
Table 39: MPCE (last 30 days)	96
Table 40: MPCE-30 Days (Rs.0.00).....	97
Table 41: MPCE-30 Days (Rs.0.00).....	97

Table 42: MPCE (URP).....	98
Table 43: MPCE (URP).....	98
Table 44: Two-sample t test with unequal variances - 50th Round.....	99
Table 45: Two-sample t test with unequal variances - 55th Round.....	99
Table 46: Two-sample t test with unequal variances -61st Round.....	100
Table 47: Two-sample t test with unequal variances - 66th Round.....	100
Table 48: Test for equality assuming homogeneity (50th round).....	101
Table 49: Test for equality assuming homogeneity (55th round).....	101
Table 50: Test for equality assuming homogeneity (61st round).....	101
Table 51: Test for equality assuming homogeneity (66th round).....	102
Table 52 : Sample size	105
Table 53 : Per capita MPCE in 8 states and all India average (constant prices).....	107
Table 54: MPCE range of Major food Items (All India) at constant prices	109
Table 55: MPCE range of Major non-food items (All India) at constant prices	109
Table 56: MPCE range of Major food items (Goa) at constant prices.....	110
Table 57: MPCE range of Major non-food items (Goa) at constant prices	111
Table 58: MPCE range of Major food items (Bihar) at constant prices.....	112
Table 59: MPCE range of Major non-food items (Bihar) at constant prices.....	113
Table 60: MPCE range of Major food items (Haryana) at constant prices	114
Table 61: MPCE range of Major non-food items (Haryana) at constant prices.....	115
Table 62: MPCE range of Major food items (Kerala) at constant prices	115
Table 63: MPCE range of Major non-food items (Kerala) at constant prices	116
Table 64: MPCE range of Major food items (Madhya Pradesh) at constant prices	117
Table 65: MPCE range of Major non-food items (MP) at constant prices.....	118
Table 66: MPCE range of Major food items (Maharashtra) at constant prices.....	119
Table 67: MPCE range of Major non-food items (Maharashtra) at constant prices.....	120
Table 68: MPCE range of Major food items (Odisha) at constant prices	121
Table 69: MPCE range of Major non-food items (Odisha) at constant prices.....	121
Table 70: MPCE range of Major food items (Tamil Nadu) at constant prices	122
Table 71: MPCE range of Major non-food items (Tamil Nadu) at constant prices	123
Table 72: Food and non-food proportions (Rural).....	124
Table 73: Food and non-food proportions (Urban).....	125
Table 74: Expenditure inequality (Gini Coefficient)	128
Table 75: Consumption inequality (Gini coefficient) in India	133
Table 76: Inequality decomposition of social groups among Hindus (50 th Round)	134
Table 77: Inequality decomposition of social groups among Hindus (61st round)	135
Table 78: Inequality decomposition of social groups among Hindus (66 th round).....	135
Table 79: Inequality decomposition of social groups among Muslims (50th Round)	138
Table 80: Inequality decomposition of social groups among Islam (61st Round)	139
Table 81: Inequality decomposition of social groups among Islam (66th Round).....	139
Table 82: Inequality decomposition of social groups among Christians (50th Round)	142
Table 83: Inequality decomposition of social groups among Christians (61st Round).....	142
Table 84: Inequality decomposition of social groups among Christians (66th Round)	143
Table 85: Rural Household expenditure proportion on food by social groups and religion at constant prices. (Figures in parentheses are standard deviations)	147

Table 86: Urban Household I expenditure proportion on food by social groups and religion at constant prices. (Figures in parentheses are standard deviations).....	148
Table 87: Description of Variables	150
Table 88: Total Consumption expenditure - 50th Round.	153
Table 89: Total Consumption expenditure– 61st Round.....	154
Table 90: Total Consumption expenditure– 66th Round.	156
Table 91: Distribution of household according MPCE (Per cent).....	161
Table 92: MPCE (Rural) at Constant Prices (Rs.).....	167
Table 93: MPCE (Urban) at Constant Prices (Rs.).....	167
Table 94: Poverty rates (Per cent) for Goa and India.....	169
Table 95: Two-sample t test with unequal variances - 50th Round.....	172
Table 96: Two-sample t test with unequal variances - 55th Round.....	172
Table 97: Two-sample t test with unequal variances -61st Round.....	172
Table 98: Two-sample t test with unequal variances - 66th Round.....	173
Table 99: Test for equality assuming homogeneity (50th round).....	174
Table 100: Test for equality assuming homogeneity (55th round).....	174
Table 101: Test for equality assuming homogeneity (61st round)	174
Table 102: Test for equality assuming homogeneity (66th round).....	174

List of Figures

Figure 1: Income, Growth and Consumption.....	2
Figure 2: Food and non-food expenditure (MPCE–Rural & Urban) in Rs.....	92
Figure 3: Relation between total consumption expenditure & food expenditure –50th, 61st and 66th Rounds.	93
Figure 4: Proportion of consumption on food (Kernel density)	94
Figure 5: PC MPCE ranges of selected states & All India (constant Prices).....	108
Figure 6: Food and non-food proportions (50th Round)	126
Figure 7: Food and non-food proportions (61st Round)	126
Figure 8: Food and non-food proportions (66st Round)	127
Figure 9: Lorenz Curve (All India– 50th Round).....	129
Figure 10: Lorenz Curve (All India- 61st Round)	129
Figure 11: Lorenz Curve (All India- 66th Round).....	129
Figure 12: Kuznets Curve.....	145
Figure 13: Growth in MPCE from 50th to 66th round at constant prices (Per cent).....	168
Figure 14: Consumption inequality (Gini coefficient)	171

Chapter 1

Introduction

The target of Indian Economy has been to achieve economic growth with self-reliance, social and economic justice by reducing inequality and poverty. Indian economy is one of the emerging economies of the world. It is the third largest economy of the world in terms of purchasing power parity (ET 2014). As an emerging economy, one of its main challenges is reduction in inequality in consumption expenditure and poverty.

This study analyzes the trends of consumption inequality and poverty estimates based in India on the consumption expenditure. To start with, we provide a brief description of India's macro-economic aggregates, income and consumption expenditure scenario.

1.1 Macro-economic aggregates

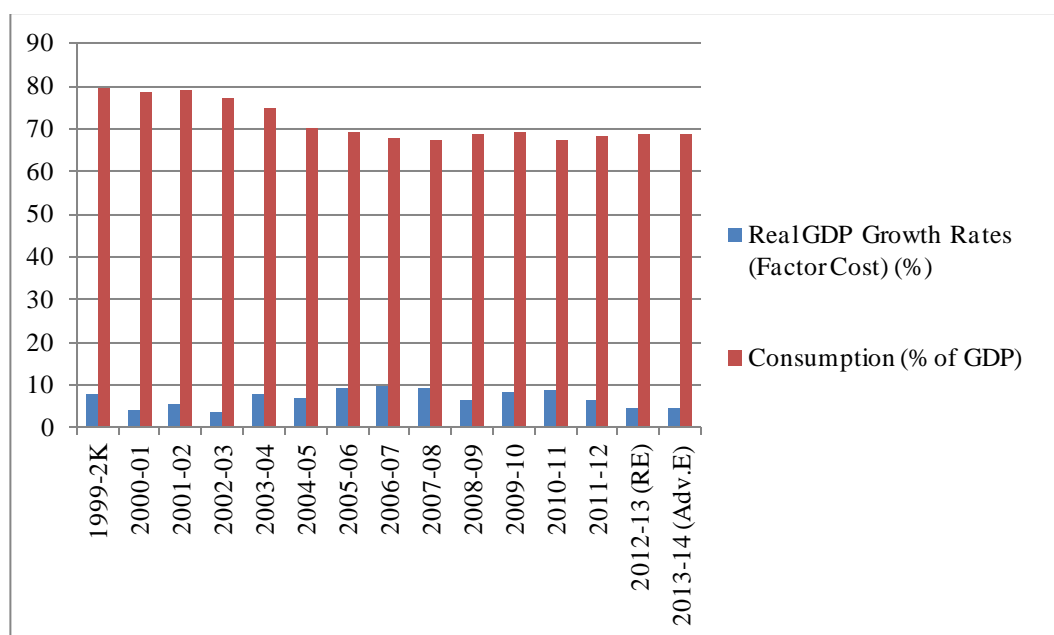
The Indian economy has grown at a much slower rate during the first three decades after independence. The annual average growth rate of real NNP during the period 1950-51 to 1980-81 was 3.4 per cent and the growth in the per capita income was 1.2 per cent. After 1980-81, the economy witnessed acceleration in growth rate of both NNP as well as per capita income. During the period 1980-81 to 1996-97, the annual average rate of growth in NNP was 5.5 per cent while the annual average growth rate in per capita income was 3.3 per cent (RBI 2015). However, the economic growth has again declined in recent years.

But, the decadal growth rate of GDP at factor costs is showing an increasing trend. The decadal growth rate of GDP at factor cost during 1981-1990 was 60 per cent, which increased to 72 per cent during 1991-2000. Further, it has gone up to 99 per cent during 2001-2010 (RBI 2015).

1.2 Indian Economy: Income and Consumption Scenario

The real GDP growth and consumption (as a percent of GDP) in India during the period 1999-2000 to 2013-2014 are given in figure 1. It is evident from the table that consumption as a percentage of GDP shows a declining trend. It has declined from 79.4 per cent in 1999-2000 to 68.9 per cent in 2013-2014. (Source: RBI Handbook)

Figure 1: Income, Growth and Consumption



Author's calculation using CSO data (RBI 2015).

1.3 Consumption Expenditure

Consumption expenditure is considered as a crucial variable for estimating poverty and standard of living. As India is the second largest country in population and has a large proportion of the population struggling with poverty, the expenditure of the household sector occupies an important place in research and policy. If Consumer goods are not purchased by the household consumers, there will be a problem of overproduction and under consumption which in turn may result in economic fluctuations in the economy. Therefore, one of the significant channels of measuring economic development is the changes in consumer expenditure. Hence, the study of consumer expenditure is important in understanding improvements in well being and inequalities in emerging economies like India.

1.4 Household Consumption in India

In India, the major source of data on consumer expenditure is available through the National Sample Surveys conducted by NSSO (NSSO 2006), Government of India. The researchers make use of this data extensively for various purposes including estimation of poverty. The NSSO conducts large sample consumer expenditure surveys mostly once in five years using multi-stage sampling methodology. Many a time small sample surveys are also conducted in between. The survey is carried out both in rural and urban areas by selecting the households and interviewing the members of households.

In consumer expenditure surveys information is collected on quantity and value of household consumption with a reference period of 'last 7 days' and/or 'last 30 days' for most items of consumption (including all food items) and 'last 365 days' for

some less frequently purchased items. However, in the 64th round of Consumer Expenditure Survey '7 days' recall period is not used. As per NSSO consumer expenditure survey definition Households are a group of persons living together and eating food from common kitchen excluding temporary guests. Household consumer expenditure is expenditure incurred by a household on domestic consumption, namely food and non-food items during a particular period of time. The survey covers a large number of items so as to ensure exhaustive basket of household consumption items.

In India, official poverty estimates are calculated by the Planning Commission, Government of India based on consumer expenditure data of NSSO. Consumption poverty line is the reference poverty line basket (PLB) of household goods and services consumed by those households at the borderline separating the poor from non poor. The official poverty estimates of the Planning Commission (GOI, PC 2013) have received criticism in terms of methodology adopted and the extent of poor in India. There are poverty estimates evolved by various experts using different methods and thus their poverty estimates vary significantly. Thus, in view of different poverty estimates being available, the debate on extent of poverty in India has become intense with claims and counterclaims.

We study the patterns of consumption expenditure in India based on the unit level data for the four quinquennial (five yearly thick sample) rounds (1993-94, 1999-2000, 2004-05 and 2009-10). This study is a detailed analysis of some selected states and a special chapter is devoted to analyse Goa's consumption patterns, poverty and consumption inequality.

1.5 Objectives

The objectives of our study are:

- i. To examine the growth of household consumer expenditure of different food & non-food items in rural and urban areas.
- ii. Critically compare the different poverty estimates.
- iii. Undertake an inter-period comparison of household consumer expenditure inequalities in India as a whole and some selected states, (including Goa) across NSSO quinquennial rounds.

1.6 Research Gap

Our literature survey suggests the following gaps in the literature.

1. Consumption analysis is mostly confined to food items.
2. Elasticity and inequality estimates are mostly confined to food items.
3. There are few studies that have done analysis across rounds especially recent ones up to 66th round.
4. There are no studies on Consumption patterns in Goa using NSSO data.

1.7 Chapter Scheme

Chapter scheme of the thesis is given below.

Chapter 1: This chapter titled “Introduction” covers macro-economic aggregates, income and consumption scenario, objectives, research gap and chapter scheme. This chapter also gives information regarding the importance of the analysis of consumption.

Chapter 2 “Literature Review” gives an overall picture of available literature on consumption expenditure, inequality and poverty. The literature survey is divided into two parts. A) Consumption and inequality and B) Poverty. The literature review highlights the consumption patterns of India, inequality trend and poverty debate in India.

Chapter 3 titled “Data and Research Methodology” discusses the data source and the various methods used in the study. Unit level data of NSSO for the four quinquennial (five yearly thick sample) rounds (1993-94, 1999-2000, 2004-05 and 2009-10) is used for the analysis of consumption pattern, poverty and inequality.

Chapter 4 entitled **“India’s Poverty Estimate – A Review”** gives a picture of official and unofficial poverty estimates and an analysis on rate of poverty decline in India. Study covers Poverty decomposition Foster Greer and Thorbeck Poverty analysis.

In **Chapter 5** titled **“Transition of Consumption Patterns in India”**, we study the trends of consumption using mean and median consumption according to household characteristics. A comparative study of 8 selected states with All India average has also been done. In addition, a comparative analysis of consumption pattern among religions- Hinduism, Islam, Christianity and Sikhism and within that among social groups – STs, SCs, OBCs and Other has also been done.

Chapter 6 on **“A Comparative Analysis of Consumption”** examines the MPCE of major food and non-food items among 8 selected states viz. Bihar, Goa, Haryana, Kerala, Madhya Pradesh, Maharashtra, Odisha and Tamil Nadu. Expenditure inequality has been studied using Gini Coefficient and Lorenz curve analysis.

Chapter 7 title of “**Consumption Inequality in India**” focuses on inequality decomposition measures. These measures include, Percentiles, General Entropy measures, Atkinson’s index and Gini coefficient. Expenditure pattern has been studied across social groups and religions. Regression analysis has been done to the characteristics of a household that determine its expenditure.

Chapter 8 “Consumption, Inequality and Poverty in Goa” specifically focuses on Goa’s consumption patterns and poverty. We discuss the consumption pattern of major food and non-food items and compare the changes in poverty and inequality in four rounds of NSSO. The study covers consumption inequality using Gini coefficient, analysis of rural-urban variation in MPCE t-test and variation in MPCE among social groups and across religion using multivariate analysis.

Chapter 9 titled “**Findings and Conclusions**” brings together the findings of the study. This chapter concludes the study and summarises the findings. The findings cover poverty debate in India, poverty decomposition, consumption pattern, variation in rural-urban consumption, variation in MPCE among social groups and across religions, consumption pattern and inequality in 8 selected states and the results of exclusive study on Goa’s consumption analysis.

Chapter 2

Literature Review

2.1 Introduction

The research on poverty and consumption patterns in India has been very active.

Some of the major points of debate that have emerged are:

1. **The measurement of poverty:** There has been a bitter debate on the extent of poverty in India. Part of the debate is about the disagreement in methodology.
2. **Expenditure patterns:** Income changes has changed consumption pattern over the years. There is now a gradual shift in the proportion of expenditure from food to non-food items. There also seems to be a decline of cereal consumption and rise of consumption of superior food items.

We now present a review of some of the major studies done by different authors. It is given in two parts viz. Consumption patterns and inequalities followed by Poverty estimates.

2.2 Consumption pattern and inequalities

Consumption pattern in India is studied using consumer expenditure surveys conducted by the National Sample Survey Office (NSSO), Government of India at regular intervals. Besides NSSO survey reports, there are research papers by various researchers on the consumption pattern and inequalities in India.

One of the oldest studies is by Darby (1975), which gives consumer expenditure estimated by integrating pure consumption and household investment in durable goods.

Another international study uses the household food consumption in the Federal Republic of Germany (Murty 1981), using a complete demand system approach, based on linear and quadratic expenditure systems (LES & QES). The data set for estimation of complete demand system comprised per capita private consumer expenditure (in current prices) on various items in the consumer's budget and the corresponding retail prices. They used the aggregate expenditure time series data 1960-76 on four broad groups of commodities viz, (i) food (ii) beverages & tobacco (iii) clothing and footwear and (iv) other non-food (rest of the consumer expenditure). The study shows that there is a gradual shift in the consumption priorities of the households from food to non-food groups.

The study reveals that income elasticity of demand for food is less than unity but it is increasing over the sample period. This confirms the validity of Engel's law. Engel's law states that the proportion of income spent on food falls, when the actual expenditure on food rises. In other words, the income elasticity of demand of food is between 0 and 1. It suggests that consumers increase their expenditures for food products (in percent terms) less than their increases in income.

The decomposition analysis of household consumer expenditure in India gives measurement of inequality within regions, between regions, within sectors and between sectors for two period's viz. 1977-78 and 1983 (Mishra and Parikh 1992). For this, the technique of decomposing the inequality measures by population sub-groups has been adopted. The criterion for grouping has been the population

belonging either to the region or sector depending on the purpose of decomposition. Their results consistently indicate that the inequality within states contributes much more towards national inequality and within sector inequality explains a large part of state level inequality. The inequality at state levels has shown a decline from 1977-78 to 1983 due to better monsoon season in 1983 and the success of the anti-poverty programmes. To examine the trend of inequality the level of decomposition comprised between regions, between sectors and within regions, within sectors covering 17 states of India for rural and urban areas separately. Their primary purpose was to examine the between region and within region components in all India inequality and the second purpose was to examine the between sectors and within sector components in the state level inequality and in the all India inequality. The theoretical property of decomposition is additive decomposability which means sum of a 'between group' and a 'within group' terms. It is the inequality and within sector inequality contributes more towards the within state inequalities. Reduction in inequalities within the states can be very important and effective in all India inequality.

Deaton and Drèze (2002) argue that poverty declined in 1990s and regional disparities increased. There is also a decline of cereal consumption and rise of consumption of superior food items viz., vegetables, fruit, milk, fish, meat, etc. They found three aspects of rising inequality: (i) Divergence in per capita consumption across states; (ii) Growth rates of per capita expenditure from 1993-94 to 1999-2000 point to significant increase in rural-urban inequalities at all India level and in most states and (iii) Rising inequality within states, particularly in the urban sector, has moderated the effects of growth on poverty reduction.

Various other studies on consumption pattern in India indicate declining share of cereal consumption and significant increase in non-food expenditure over the years. It has been claimed that diversification in the food basket due to urbanization will provide food security and improve the quality of life by adding to the nutritional status and welfare of the population (ICRIER 2006). With diversification, consumers are exposed to a wider choice of foods and shifts in dietary pattern or fall in price. Per capita consumption of food grains has been declining and some of this decline indicates an increase in the consumer's welfare. Sharp decline in cereal consumption can be attributed to changes in consumer tastes from food to non-food items and within the food group, from cereals to non-cereal food items and from coarse to fine cereals and these issues are generally debated as having a direct implication on poverty and increasing incidence of hunger in the country (ICRIER 2006).

Another study done by Mittal (2006) analyzed the food basket of households in rural and urban areas under different expenditure groups in the last two decades, factors that leads to changes, using NSSO data. A study on nature and causes of patterns of inequality and poverty in India reveals that one of the reasons behind the increased income inequality observed in India in the post-reform period has been the stagnation of employment generation in both rural and urban areas across the states (Pal and Ghosh 2007).

Using real household MPCE as a measure of welfare in rural and urban India in 1993–94 & 2004, a period coincides with liberalization reforms and rapid economic growth, quantile regressions were estimated to analyze urban – rural welfare gap (Chamarbagwala, 2009). The author used natural logarithm of real monthly per

capita household consumption expenditure (log RMPCE) as a measure of welfare and focused on urban – rural difference in the distribution of log RMPCE.

Studies on consumption pattern in recent years in India reveal that there has been a gradual decline in the proportion of expenditure on food items in both rural and urban areas. Spending on food items is rising in rural areas than in urban areas and there is reduction in the share of cereals in urban sector mainly due to low cost of cereals (Ramachandran 2008). But, there has been a small increase in the cereal consumption of the poor. The expenditure on pulses has remained more or less same in all the income groups. But, due to soaring cost of pulses, there has been a decline in pulse consumption in all the income groups (Ramachandran 2008).

In upper income groups there has not been any decline in protein intake in spite of reduction in pulse intake as there has been a greater dietary diversification with increase in consumption of milk and animal products. But among poor, the pulses remain the major source of protein and lower pulse consumption can result in further reduction in protein (Ramachandran 2008). According to Ramachandran expenditure on vegetables and fruits has increased; the increase is more in urban areas as compared to rural areas. NSSO data showed an increase in the per capita consumption of edible oil (Major oils used- groundnut, mustard, soya and sunflower) and there has been slow and steady decline in energy intake in rural areas

The study of (Mishra and Ray 2009) finds that prices play a crucial role in distributional comparisons between households at a point of time and evaluating their welfare gains and losses over a period of time. Inflation adversely affects the poor, results in gulf between nominal & real expenditure inequalities. Demand is estimated for 4 items food, fuel & light, clothing, bedding & footwear, and

miscellaneous. Consumer Price Index for Agricultural Labour (CPIAL) was used as rural and Consumer Price Index for Industrial Workers (CPIIW) - urban prices. They used data from the 50th, 55th and 61st rounds of NSSO.

Similarly, Kannan and Raveendran (2011) analyse population ranging from “extremely poor” to “vulnerable” with an average daily per capita consumption expenditure (DPCE) ranging from Rs 9 and Rs 20, respectively, as of 2004-05. The study observes that poverty is associated with a social gradation i.e., SCs, STs, Muslims, OBCs, upper caste Hindus, Christians and Sikhs and with low levels of education and informality in work status. They classified 18 major states as top, middle and bottom level performers. The study found that only in Punjab majority of the people were neither poor nor vulnerable by standard of consumption. STs and SCs, have much less to consume than all other social groups.

Oldiges (2012) compared expenditure based and income based Engel curves using NSSO on 61st Round data and the Indian Human Development Survey (IHDS) 2004-05. The study reveals that per capita cereal consumption (PCCC) in India is unrelated to Per Capita Income (PCI). It is influenced by factors such as education, occupation, region, demography and food habits. Richer people do not increase PCCC, but they do buy higher quality, more expensive cereals. Education enables people to afford higher quality cereals and diversify their diets.

Gupta Shalini (2012) compared the three NSSO quinquennial rounds – 50th, 61 and 66th and observed that there have been some significant changes in the food consumption basket in India. Besides a shift away from food to non-food items (in all expenditure categories across both rural and urban areas), the data also confirm

the presence of a sustained shift within food to non-cereals and within cereals away from traditional staples (jowar, bajra, maize).

Thus, in nutshell from the above literature survey on consumption patterns and inequality we can observe that there is a gradual shift from the consumption of food items to non-food items. Price rise caused the curtailing of cereal consumption and use of more vegetables, milk, egg and fruits in the meals. Education, increase in income, occupational changes, etc, have also contributed for the rise in the consumption of high quality food items. Similarly increase in non food items, out of the home food consumption etc, are also increasing due to increase in income, knowledge and advertisements.

In India, the poverty estimation is largely based on the expenditure survey conducted by NSSO. Consumption and poverty are interrelated. There is inverse relationship between consumption and poverty. Therefore, now we provide the literature review on poverty lines and poverty estimates.

2.3 Poverty Estimates

Poverty is considered as one of the major obstacles of economic growth. According to Prof. Nurkse, poverty means an action and reaction of circular group of forces influencing each other in such a way that the poor country will remain in a state of poverty (Nurkse's Model, n.d.). That is why Nurkse quoted that "A country is poor because it is poor." According to Tendulkar Committee, the concept of poverty is associated with socially perceived deprivation with respect to basic human needs- food, clothing shelter, health and education as well as the need to be mobile for purposes of social interaction and participation in economic activity. Thus, the concept of poverty is multi-dimensional (material and non-material dimensions).

While measuring poverty line, the focus generally has been on the material dimensions and only on minimum consumption requirements. In other words, absolute (private) consumption poverty line is taken into convey the inability of an individual or household to afford a socially perceived normative minimal basket of basic human needs that is expected to be reflected in some normative minimal standard of living that should be assured to every households.

There are different methodologies to estimate poverty leading to different poverty estimates. Each method has its own merits and demerits. Therefore, the exercise of estimating the poverty ratio has continued to engage researchers. There is an ongoing debate on poverty composition i.e. whether poverty estimation has to be calorie oriented based on food items alone or it should include non-food items like education, health, etc.

The first step in estimating poverty is to define and quantify a poverty line. The idea of poverty line was first mooted by the Indian Labour Conference in 1957. The poverty line in India was quantified for the first time in 1962 by a Working Group of the Planning Commission in terms of a minimum requirement (food and non-food) of individuals for healthy living. The money value of the minimum requirement was set as per capita consumption expenditure of Rs.20 per month at 1960-1961 prices and was termed as the poverty line.

Dandekar and Rath (1971) were pioneers in poverty studies in India. They found that National Income per capita in 1960-61 was Rs. 306.7. Since a more direct measure of the level of living of a people is per capita Private Consumer Expenditure they calculated that in 1960-61, this was Rs. 276.3 per capita per annum. The NSSO estimate of private per capita consumer expenditure in 1960-61 was Rs. 278.8. The

difference between this and the Dandekar and Rath (1971) estimate was small. In 1960-61, the poorest households having monthly per capita expenditure less than Rs. 8 constituted 6.38 per cent and 2.15 per cent of rural and urban population respectively. More than 90 per cent of this small expenditure was devoted to food and fuel for cooking.

Dandekar and Rath (1971) have estimated rural unemployment to be 40 percent of the actual population of which 10 percent were unemployed because they did not possess any effective earning capacity and the remaining 30 percent were those who possessed the earning capacity but were unemployed or under employed. They calculated the number of poor falling below the poverty line both in the rural and urban areas by taking into account the price variation in the two segments. They estimated the value of the diet with 2,250 calories as the desired minimum level of nutrition. They suggested that whereas the Planning Commission accepts Rs. 20 per capita per month (or Rs. 240 per annum) as the minimum desirable standard, it would not be fair to use this figure for both the urban and the rural areas. They, therefore, suggested somewhat lower minimum for rural population, i.e., Rs. 180 per capita per annum and somewhat higher minimum of Rs. 270 per capita per annum.

Dandekar and Rath (1971) have shown a constant proportion of both the rural and the urban poor during the period 1960-61 and 1967-68. However, in their estimate there was an absolute increase in the rural poor from 135 million to 166 million and in the urban poor from 42 million to 49 million. They estimated that in 1968-69 about 40 percent of the rural population, (i.e., 166 million) and a little more than 50 percent of the urban population (i.e., 49 million) lived below poverty line showed a increase from 177 million in 1960-61 to 215 million in 1968-69, but there was no

change in the percentage of rural and urban poor to the population. It was accordingly estimated that in 1960-61 about 33.12 per cent and 48.64 per cent of rural and urban population respectively would have been living below the level of poverty line.

In 1979 Task Force on Projection of Minimum Needs and Effective Consumption Demand (GOI, PC 2009) was formed by the Planning Commission, which defined the poverty line as per capita consumption expenditure level, which meets the average per capita daily calorie requirement of 2400 in rural and 2100 in urban sectors along with a minimum amount of non-food expenditure. It also used the recommendation of the Nutrition Expert Group (1968) regarding the age-sex-activity specific calorie allowances in order to calculate average daily per capita requirement for rural and urban areas using the age-sex-occupational structure of their respective population.

The Task Force used the 28th Round (1973-1974) National Sample Survey data on household consumption both in quantitative and value terms in order to compute the monetary equivalent of these calorie norms. During 1973-74, it was reported that the average expenditure on consumption in a month was required to be Rs. 49.09 to get 2400 calorie per capita in a day in rural and Rs. 56.64 per capita in a month is needed to have 2100 calorie in urban areas. These poverty lines expressed in terms of per capita consumption expenditure conform to a consumption basket, which satisfies the above calorie norm and meets a minimum of non food requirements, such as clothing, shelter, transport, etc. Thus, the concept of poverty line used here was partly normative and partly behavioural.

The calorie norms of 1973-74 were used for estimation of poverty lines for the succeeding years by revising the 1973- 74 poverty lines initially by the Wholesale Price Index (WPI). The use of WPI became controversial as it comprised a range of items (about half of its weight) that are not meant for private consumption at all. Besides, consumers buy goods at retail and not at wholesale prices. The Study Group on Estimation of Poverty Line, constituted by the Planning Commission during the Seventh Five Year Plan (1985-1990), recommended use of private consumption deflator of the CSO to update the 1973-1974 poverty lines for later years.

The same poverty line defined at national level (separately for rural and urban areas) was used in all the States/Union Territories (UTs). The Task Force's methodology for quantifying poverty lines was regarded by some as inappropriate and even inadequate in giving a representative picture of the incidence of poverty in India.

Dandekar estimated that in 1983-84, a total of (BPL) reduced from 52.4 per cent to 39.4 per cent from 1970 to 1988. Datt and Ravallion (2010) also estimated that person below the poverty line are 43.9 per cent – 40 percent in urban and 45 percent in rural areas. Their study clearly brings out that poverty gap in rural areas is 12.7 percent and in urban areas is 10.94 percent. Minhas, et al in their study revealed that the incidence of poverty in 1987-88 at the all India level comes to about 44.8 and 36.5 percent respectively in rural and urban India, rather than 32.7 and 19.4 per cent as reported by the Planning Commission. For the Indian Union as a whole, it works out to 42.7 per cent for 1987-88 as against 29.2 per cent reported by the Planning Commission.

In September 1989, Expert Group on Estimation of Proportion and Number of poor was set up by the Planning Commission to examine the methodology incorporated

for the calculation of poverty and to redefine the poverty line. However, it did not find it necessary to redefine the poverty line.

Minhas, Jain, and Tendulkar (1991) found that the percentage of the rural poor declined during the period 1956-57 to 1967-68. On the other hand, Deaton and Kozel (2004) Ojha and Bardhan indicate the increasing proportion of the rural poor. In their view, the direction of change indicates a trend of growing pauperization.

PC (1993) estimated that rural poverty ratio has declined from 56.4 per cent in 1973-74 to 39.1 per cent in 1987-88. The overall poverty ratio has therefore, declined from 54.9 per cent in 1973-74 to 39.3 per cent in 1987-88. Over the two decade period 1973-74 to 1993-94, there was a perceptible decline in the incidence of poverty – from 4.9 percent in 1973-74 to 35.6 percent in 1993-94. Since population had increased considerably over the period, the absolute number of poor people did not decline.

The 55th Round of the NSSO (July 1999-June 2000) was a quinquennial large sample survey. It was thus expected to generate data useful to prepare poverty estimates comparable with those from the previous large sample surveys. The possibility of this has been questioned due to a fundamental change of including additional recall period of 7 days in the methodology adopted by the NSSO in this Round. Keeping in mind the lack of comparability in the methodology of the 55th Round with the earlier large sample surveys, some studies attempted to generate adjusted poverty estimates. Prominent among these are Sundaram and Tendulkar (2009), Deaton and Dreze (2002), updated further by Sen and Himanshu (2002), and Datt, Deaton and Kozel (2004), Kozel and Ravallion. All these studies show a decline in poverty between 1993-94 and 1999-2000 in varying degrees. Deaton and Dreze (2002)

emphasized that regional disparities as well as economic inequality within States increased during this period. In a recent study, Deaton and Drèze (2002), Sen and Himanshu (2002) have shown that the poverty ratio declined at the most by 3 percentage points between 1993-94 and 1999-2000. Hence, it is very much possible that the absolute number of poor increased during the period. NSSO results are the basis of poverty estimates.

The data were collected on uniform recall period (URP) using 30 days for all items. The data was also available using 365 days for 5 frequently purchased non-food items, viz., footwear, durable goods, clothing, institutional medical expenses and monthly expenditure on 30 days recall period for other things, known as mixed recall period (MRP), the Planning Commission, (NSSO 2006) using the Expert Group methodology has estimated poverty in 2004-05 using both the distributions. The following results are obtained:

(i) Poverty estimates based on URP indicate 28.3 per cent and 25.7 per cent of rural and urban population respectively was below the poverty line. For the country as a whole 27.5 per cent of total population was below the poverty line in 2004-05.

(ii) The corresponding figures obtained from MRP indicate 21.8 per cent in rural and 21.7 per cent belongs to urban as well as 21.8 per cent in total are in poverty in 2004-05.

Deaton and Drèze (2002) explain a new set of integrated poverty and inequality estimates of India and Indian States for 1987-88, 1993-94 and 1999-2000. Their poverty estimates are broadly consistent with independent evidence over per capita expenditure, state domestic product and real agricultural wages. They show that poverty decline in 1990s preceded more or less in line with earlier trends. Regional

disparities increased in the 1990s, with the southern & western region, doing much better than the northern and eastern regions. Economic inequality also increased within states, especially with urban and rural areas. They briefly examined other development indicators, relating for instance to health and education. Most indicators have continued to improve in the nineties, but social programme has followed very diverse pattern ranging from accelerated progress in some fields to show down and even regression in others.

Poverty trends in India in the 1990s have been a matter of intense controversy. Some researchers argued that the 1990s have been a period of unprecedented improvement in living standards. Others claimed that it has been a time of wide spread improvement. The pattern is substitution away from cereals to other food items as income rises. The consumption of superior food items such as vegetables, milk, fruit and meat did rise quite sharply across all expenditure groups. Thus, decline of average cereal consumption may not be a matter of concern. They argued for supplementary expenditure-based data with other indicators for living standards, literacy rates, health achievements, nutritional levels, rime rates and quality of environment.

The most widely used poverty indicator in the 'head count ratio' (HCR) is the proportion of the population below the poverty line. It suggests that there was a considerable decline in poverty from 1993-94 (36 per cent) to 1999-2000 (26 per cent). According to Deaton and Drèze (2002), the HCR is biased and in several cases the poverty lines are implausible, very much higher urban than rural lines in several states. The source of the problem lies in the use of definite price indexes in adjustments of the poverty line over time and between states.

They presented a new series of consistent poverty estimates for the most recent quinquennial rounds (1987-88, 1993-94 and 1999-2000). These involve four major departures from the official estimates. – (i) An attempt is made to adjust the 55th round estimates to achieve comparability with the earlier rounds. (ii) They used improved prices indexes to update the poverty line over time and to derive state specific poverty lines from the all India poverty line. (iii) A similar procedure is used to derive an expert estimate of the appropriate gap between rural and urban poverty lines. (iv) They presented in addition to corrected HCRs, estimates of potentially more informative poverty indicator – the poverty gap index (PGI).

Real agricultural wages are highly correlated with standard poverty indexes such as headcount ratio; where poverty is higher, wages tend to be lower and vice versa. But, even the reduced growth rate of agricultural wages in the 90s, at 2.5 per cent per year, points to significant growth of per capita expenditure among the poorer sections of the population. During the 90s the cereal consumption expenditure had declined and consumption of superior food items such as vegetables, fruit, milk, fish, meat etc rose.

Deaton and Drèze (2002) further found that there is consistent evidence of continuing poverty decline in 90s in terms of HCR, (which has good communication value and easy to understand). But, much caution is required in interpreting poverty trends on the basis of HCRs so it is less informative than the PGI. Growth pattern in 90s are characterized by major regional imbalances. Two important aspects are rising rural urban disparities in per capita expenditure and rising inequality of per capita expenditure within urban areas in most states. Deaton and Dreze (2003) claim that the poverty ratio declined by 7 percentage points (50th - 55th rounds). Deaton

obtained 'recall period adjusted' 55th round poverty counts using only the URP from 50th round.

Though this method is elegant and simple, he was unable to verify his assumptions and assumed that validity extended to 55th round but made the results tentative. Deaton and Drèze (2002)'s use of 50th round (in 7 day recall) involved upward adjustment of reported 55th round food spending which are overestimates, led adjusted estimates to be less than directly adjusting for 365 day. These revised estimates are similar to Datt, Kozel and Ravallion (2003)'s and Kijima and Lanjouw (2003), who by applying a multivariate parametric model estimated that fitted ratios declined only by 2.9 and 1.4 percentage points in rural-urban India between 50th and 55th rounds. Thus, there is overwhelming evidence that the official poverty for 55th round was underestimated very substantially.

Official poverty ratio increased only in urban Orissa. Deaton's adjustment adds only urban Assam. Comparing 50th round MRP to unadjusted 55th round Consumption Expenditure Survey (CES) adds five more cases, rural Assam, Madhya Pradesh and Odisha and urban Bihar and Uttar Pradesh. Food adjustment adds urban Haryana and modified Deaton adjustment further include rural Andhra Pradesh, Tamil Nadu and West Bengal. Like this authors have identified many more variations. Urban poverty reduction was worse than rural in most regions.

Sen and Himanshu (2004) have debated to design a large sample survey with uniform recall period of 30 day because the addition of both 7 days and 30 days recall period resulted in 'contamination'. This means that the 55th round with 7days and 30 days mixed recall period led to the non-comparability of the data with previous survey data, which may give contradictory conclusions. 55th round poverty

estimates were based on 30 day food recall, ignoring 7 day recall and accepting 365 day recall of clothing etc, which implied that poverty incidence had declined by 10 percentage points since 1993-94 (50th round).

Official estimates before 55th round were based 30 day URP for all items. The 55th round official estimates are based on 30 day recall for food and intoxicants from consumption expenditure survey, which asked both 7 and 30 day questions, on these items. Besides, it used 365 day recall for 5 low frequency items (clothing, etc). The resulting 30 to 365 days MRP is not comparable to URP of previous rounds. It is possible to obtain distributions and poverty ratios using the MRP from 43rd and 50th round unit level data which used the questions on frequently used items during 30 days and 365 days. Sen and Himanshu (2004) estimated that the number of poor actually increased between 1993-94 and 1999-2000. The official URP comparison of the 43rd and 50th NSSO survey rounds displayed 3 percentage points fall in poverty ratio and the number of poor increased by 13 million in India. This also shows larger urban - rural gap and increase in urban inequality. According to NSSO estimates, the rural population of agricultural labourers increased from 27.6 per cent to 31.1 per cent between 50th and 55th rounds i.e., 3.7 per cent annual growth, against less than 1.5 per cent annual growth of wage paid days.

General agreement is that regional inequality increased significantly during 1990s. Interstate and within the states inequalities are the overwhelming component of total inequality in India. NSSO estimates explain why 1990s were a relatively lost decade for poverty reduction. 1990s was the first post independence decade when economic inequality and number of poor increased sharply in all its dimensions. Decline in growth and rise in the prices of food items led to poverty increase and its reduction faltered as every distributional indicator has since worsened. In 1990s there was a

large shift in consumption expenditure from food to non- food, especially, to fuel, medicine and conveyance. Therefore it is essential to reconstruct the stable survey design for both consumption levels and their distribution so that analysts are able to inform truthfully on serious issues and bridge the gaps in perception between policy makers and rural poor.

All India poverty reduction between 1993-94 and 1999-2000 (i.e. 50th and 55th rounds) was by at most 3 percentage points. There are only a few regions that witnessed poverty decline. Though deficiencies in calorie intake are important, the Expert Group had used consumption expenditure dimension. According to (Sen and Himanshu 2004), although actual calorie intake was around the poverty line it was well below the norm in 1999-2000.

This may be due to the preference for more variety of items and expensive diet. In India the existing calorie standards are not the proper method to describe the essential nutritional requirement as the calorie needs are changing widely and differ across regions and states. It is concluded that consumption expenditure norm is better to judge the nutritional adequacy than from nutritional indicators. The above observations have lead to technical criticisms like difficulties to calculate price deflators, over space and time. This resulted in some abnormality in the calculation of poverty using the available poverty lines. In some states like Karnataka, Maharashtra, Andhra Pradesh, Madhya Pradesh, Haryana, Rajasthan, Tamil Nadu, etc, by URP poverty estimates, poverty is higher in urban areas in 2004-05. If MRP is used, rural poverty is showing higher trend than urban poverty in some states like, Bihar, Assam, Gujarat, Jharkhand and West Bengal. As pointed out by Deaton (2002) the inflation was not captured truly by the CPI indices due to use of outdated weights.

Poverty is widespread as India has about 33 per cent of the world's economically weaker section. According to a 2005 World Bank estimate, (World Bank 2005a) 41.6 per cent of the total India's population are living below the international poverty line of Rs. 21.6 per day in urban areas and Rs. 14.3 in rural areas.

Patnaik (2008) is a critique of all poverty estimates available in India including the official poverty estimates. The official poverty line for the year 1999-2000 was Rs.328/- and thus the poverty ratio turned out to be 27 per cent. She argued that this spending is not adequate as with this, a person could be able to consume only 1890 calories, which gives a shortfall of over 500 calories per day below the required daily allowance (RDA). Thus, she questions the reliability of the official poverty estimate. While criticizing the Deaton and Dreze (2002) analysis of food and nutrition in India, she has argued that the analysis is defective as it does not look at direct and indirect cereal consumption when examining the relationship between cereal intake and income and it is fallacious to reason that the declining cereal consumption reflects a diversification of diets. She also pointed out that the Deaton- Dreze critical response to the use of 'direct poverty lines' is misplaced. She has argued that the authors' statement on an inverse relation of income and cereal consumption is not factually correct but the converse proposition hold. However, it is interesting to see the methodology used by her to estimate poverty ratio in India. If we go by her methodology, the average calorie intake per capita in rural areas of India is 2149, which is lower than RDA norm of 2400 calories for rural areas. However, she has applied this method to different MPCE classes which gives the rural poverty in India as 74.5 per cent and the urban poverty is 44 per cent. Now, the question, is these estimates reliable? As the MPCE class is highly skewed and affected by extreme values the reliability of the estimates based on Patnaik's method becomes highly

questionable. Even, if we go by certain proxy indicators regarding reasonability of rural poverty estimated by Patnaik (2008), it is evident that her estimates are affected by extreme values in the distribution and thus are highly inflated. While she has been highly critical of various poverty estimates, her own poverty estimates appear far from reality.

Sundaram and Tendulkar (2009) erroneously underestimated 50th round MRP and compared these with 55th round. They claimed greater improvement in the poverty in 1990s. However, they revised their estimates which actually imply less annual reduction than during the 1980s. This shows huge differences with official estimates. Thus, they concluded that the overestimation of consumption expenditure in 55th round is due to its recall periods. The adjustments and correction for contamination resulted in increase in 55th round all-India poverty headcounts from 27 per cent to 28.8 per cent in rural and 23.4 per cent to 25.1 per cent in urban. But, the 'food adjusted' counts of 55th round are lower than 50th round MRP, which imply reduction in poverty incidence. Thus, the authors placed maximum poverty reduction between 50th and 55th rounds at 2.8 percentage points only. Their finding contradicted.

The Planning Commission constituted an Expert Group under the chairmanship of Suresh Tendulkar to examine the issue of poverty and suggest a new poverty line and estimates. The Committee submitted its report in November 2009. It pointed out some major criticisms of the existing official poverty lines which are given below:

- (i) The earlier poverty lines assumed that the basic social services of health and education would be supplied by the State and hence, although private expenditure in education and health was covered in the base year 1973-74, no

account was taken of either the increase in the proportion of these in total expenditure over time or of their proper representation in available indices.

- (ii) The Tendulkar Committee (NSSO 2006) has estimated the new all India poverty line for the year 2004-05 for rural areas at Rs. 446.68 per capita per month and for urban areas at Rs. 578.80 per capita per month. On this basis, 41.8 per cent of the urban population was below the poverty line in 2004-05. For the country as a whole, 37.2 per cent of the people were below the poverty line in 2004-05.
- (iii) The consumption patterns underlying the rural and urban poverty line baskets (PLBs) remained tied down to those observed in 1973-74 and hence had become outdated. Thus, they have failed to take into account the changes in the consumption pattern of the poor over time.
- (iv) Crude price adjustment for prices was leading to implausible results such as proportion of total urban population below poverty line being higher than its rural counterpart in certain major States.

Himanshu (2010) made suggestions to the Planning Commission's Expert Group to review the methodology for the poverty estimation and to frame a new poverty line. Official estimate of urban poverty of 25.7 per cent in 2004-05 was considered as reasonable and accepted. Using all-India urban poverty estimate, all-India urban poverty line was derived using Mixed Recall Period (MRP) rather than Uniform Recall Period (URP). The result of all these is that rural poverty HCR 41.8 per cent during 2004-05 as against the official estimate of 28.3 per cent.

Himanshu (2010) used the consumption expenditure survey of 2004-05 (61st Round) as it is free from the difficulties that arose from the previous rounds. He used NSSO 61st round is used to create a price index for education expenditure and for health,

60th round NSSO survey was used. Final Poverty Lines also use actual NSSO expenditure on rent and conveyance. He used the all-India urban Poverty Line of 2004-05 as the starting point of other state Poverty Lines in urban and rural areas. Budget shares used to calculate price indices are based on MRP. As NSSO has been using MRP reference in its annual rounds after 1999-2000, new poverty line has to be constructed on MRP estimates rather than URP. The poverty line relies on the indices created using price data from NSSO (2004-05) survey for food, intoxicants, fuel, clothing and footwear. Pasche Index and Laspeyre index for each state was obtained using state prices and quantity data. Fisher's index for each state is constructed using the geometric mean of these indexes and he repeated the similar method to get urban to rural Fisher Index excluding UTs. He constructed an aggregate index using Saluja – Yadav indices and unit value based indices with 23 commodity group indices, using budget shares of population around Poverty Line class to get Fisher aggregate index.

Thus, Deaton (2002) and Himanshu (2010) estimates show a rural- urban difference but are consistent to carry forward new state or sector specific poverty lines with inflation indices of each states or sector derived from the NSSO data by using CPIAL/CPIIW for commodity groups where unit values are unavailable. They relied on 61st round data.

Panagariya and Mukim (2013) opined that poverty has declined between 1993-94 and 2009-10 along every dimension. Acceleration in growth rates between 2004-05 and 2009-10 has been accompanied by acceleration in poverty reduction. The gap in poverty rates between socially disadvantaged and upper caste groups has narrowed overtime. In India there is no robust relationship between inequality and poverty.

The main points of the criticism, insofar as the poverty line was concerned, included (GOI, PC 2014):

- (i) Choice of deflators to represent price changes in the poverty line;
- (ii) Application of the same poverty line in all the states, which imply the absence of price differentials across the states;
- (iii) Use of a fixed consumption basket over time; and
- (iv) Uniform consumption basket for all the states.

The poverty threshold, or poverty line, is the minimum level of income deemed necessary to achieve an adequate standard of living in a given country. In practice, like the definition of poverty, the official or common understanding of the poverty line is significantly higher in developed countries than in developing countries.

2.4. Conclusion

It is evident from the discussion mentioned above that the poverty estimates of India are yet to attain credibility so as to depict true picture of India's poverty. When different methodologies are used to estimate poverty then it is quite obvious to have different poverty estimates. Each method may have its own merits and demerits. Therefore, the different poverty estimates are not comparable in true sense. While more and more research is needed on this, the dependency of the researchers on the NSSO large sample survey will continue as that is the only authentic source for data.

Therefore, while the exercise of data generation of poverty numbers will continue, the question is to authenticate the reasonability of these numbers.

The debate on poverty composition i.e. whether poverty estimation has to be calorie oriented based on food items alone or it should include non-food items like education, health etc will also continue. While defining the term 'poor' by taking different parameters may be easy, but estimation of poverty numbers based on those parameters is complex as it involves methodological issues and supporting data bases. Therefore, the issue need to be addressed is abject poverty as scores of people in India are below subsistence level leading to the presence of 'Hunger'. With their meagre income people not only try to survive but also spend monies on shelter, health, education etc and thus in the process may not get adequate nutrition levels. Therefore, calorie based poverty estimate is a quite reasonable statistical measure to depict the abject poverty levels in India. The exercise of estimating the poverty ratio numbers has to continue so as to give further fillip to the ongoing poverty debate in India.

Chapter 3

Data and Research Methodology

3.1 Introduction

In India, household consumer expenditure surveys are conducted by the National Sample Survey Office (NSSO) throughout the country at regular intervals in the form of 'rounds', each round normally of one year duration. NSSO (1993) Consumer expenditure surveys are normally classified as 'thin' rounds and 'thick' rounds, while 'thin' rounds are small sample rounds conducted every year and 'thick' rounds are large sample rounds conducted normally once in five years, which are also called quinquennial rounds. Household Interviews are conducted to obtain the data through a random sample of households.

3.2 Objectives of consumer expenditure surveys

The reason for conducting the Household consumption surveys is manifold. It helps in generating the primary data for analysing the Monthly Per capita Consumption Expenditure (MPCE) for the whole country. It allows us to understand the trends in rural and urban areas separately.

The major objectives of NSSO consumption surveys are to study the living of the population in different segments, to analyze the extent of inequality and poverty, to context consumer price indices, and nutrition standards.

3.3. Period of study

Our study covers consumer expenditure data of four quinquennial rounds viz. 50th round (1993-94), 55th round (1999-2000), 61st round (2004-05) and 66th round (2009-10). Hereafter, these rounds will be referred to as the ‘four rounds under study’ through this study, unless otherwise specified.

3.4 Data source

We have purchased unit level data of the above mentioned rounds from the National Sample Survey Office, New Delhi. The raw data was in text form and was extracted in Stata format using Nestar software as per the instructions of Ministry of Statistics & Programme Implementation (MOSPI) data centre.

3.5 Reference period or Recall period

The time period for which consumption is recorded in NSSO database is called the reference period. It may vary from item to item. This is also called as the recall period as the respondents are asked to recall and report the volume of consumption. The reference period in the survey is normally ‘last 30 days’ for most frequently used items and for less frequently used its it is 365 days. The reference periods or recall periods in the four rounds under study are as follows (Table 1). In the present study for the purpose comparison the author has used uniform recall period of 30 days in all the four rounds under consideration. In case of items with 365 days recall period, household expenditure has been converted into 30 days for uniformity in comparison.

Table 1: Reference period in four rounds under study

Round/Item Basket	Reference (Recall) period
50th Round (1993-94)	
i) All food and non food items	30 days
55th Round (1999-2000)	
i) Food, pan, tobacco and intoxicants	7 days and 30 days
ii) Durables, foot wear, clothing, medical services and education	365 days
61st Round (2004-05)	
i) Food items, tobacco, pan and intoxicants, fuel & light, miscellaneous goods & services, etc.	\ 30 days
ii) Clothing, footwear, education, medical care (institutional) and durable goods	30 days and 365 days
66th Round (2009-10)	
i) All food, pan, tobacco and intoxicants fuel & light, miscellaneous goods & services, etc.	30 days
ii) Clothing, footwear, education, medical care (institutional) and durable goods	30 days & 365 days.

It will be noticed that in the 55th round there was a methodological deviation. This was discussed earlier in Chapter 2 and was the cause for much controversy.

3.6. Type of Goods

The survey comprises broadly of two baskets of items viz. food items and non-food items. The composition of items in the four rounds under study is given in Table 2.

Table 2: Composition of items in four rounds under study

50th Round	55th Round	61st Round	66th Round
<u>Food items</u> Cereals Gram Cereal substitutes Pulses and products Milk and milk products Edible oil Fish, egg and meat. Fruits (fresh and dry) Vegetables, Salt, Sugar, Spices, refreshments, beverages etc.	<u>Food Items</u> Cereals Gram Cereal substitutes Pulses and products Milk and milk products Edible oil Fish, egg and meat. Fruits (fresh and dry), Vegetables, Salt, Beverages, Sugar, Spices etc.	<u>Food Items</u> Cereals Gram Cereal substitutes Pulses and products Milk and milk products Edible oil Fish, egg and meat. Fruits (fresh and dry) Vegetables, Salt, Beverages, Sugar, Spices etc.	<u>Food Items</u> Cereals Gram Cereal substitutes Pulses and products Milk and milk products Edible oil Fish, egg and meat. Fruits (fresh and dry) Vegetables, Salt, Beverages, Sugar, Spices etc.
<u>Non-food items</u> Pan, tobacco and intoxicants Fuel and light Clothing Footwear Misc goods and services Durable goods	<u>Non-food items</u> Pan, tobacco and intoxicants Fuel and light Clothing Footwear Misc goods and services Durable goods Medical (institutional & non-institutional) Goods pers. care and effects Entertainment Sundry articles Consumer Services Toilet articles Conveyance Durable goods Rent Taxes and cesses	<u>Non-food items</u> Pan, tobacco and intoxicants Fuel and light Clothing Footwear Misc goods and services Durable goods Medical (institutional & non-institutional) Minor personnel effects Entertainment Other household consumables Toilet articles Conveyance Other consumer services Durable goods Rent Taxes and cesses	<u>Non-food items</u> Tobacco, pan and intoxicants Fuel and light Clothing Footwear Misc goods and services Durable goods Medical (institutional & non-institutional) Minor durable type goods Entertainment Other household consumables Toilet articles Consumer services Conveyance Durable goods Rent Taxes and cesses

It is evident from Table 2 that in all the four rounds the food item basket has remained the same comprising 15 broad category of items. In case of non-food items

there were only 6 broad categories of items in the 50th round. However, in the 55th, 61st and 66th rounds the non-food item basket got enlarged comprising 18 items.

3.7 Sample size

The NSSO using a multi-stage random sampling method collects data from a large sample of households from all the states. In Table 3 we summarise the number of Households from whom data were collected and classified into rural and urban categories. We present data for both India and Goa state as this state is discussed separately later in this study.

Table 3: Number of Households: India and Goa

India (Sample)				India (Census)
NSS rounds	Rural	Urban	Total	
50 th (1993-94)	69206	46148	115354	152009467 (1991)
55 th (1999-2000)	71385	48924	120309	193579954 (2001)
61 st (2004-05)	79298	45346	124644	
66 th (2009-10)	59119	41736	100855	249454252 (2011)
Goa (Sample)				Goa (Census)
NSS rounds	Rural	Urban	Total	
50 th (1993-94)	146	213	359	234597 (1991)
55 th (1999-2000)	192	284	476	294812 (2001)
61 st (2004-05)	160	238	398	
66 th (2009-10)	159	285	444	343611 (2011)

(Source: NSSO and Census 1991, 2001 and 2011)

3.8 Research Questions

Our study poses the following research questions:

1. What is the status of consumption inequality in 8 selected states in India during 50th, 61st and 66th round of National Sample Survey?

2. What are the changes in the household characteristics like education, age, sex, marital status, religion, social groups, etc., in India during 50th, 55th, 61st and 66th round of NSSO?
3. What are the trends in the monthly per capita expenditure (MPCE) across different social groups?
4. What are the trends in the MPCE across different religions?
5. What are the trends in consumption of major food and non food items over the years?
6. What is the proportion of food and non-food items in the total MPCE?
7. What is the trend in consumption inequality in India?

3.9 Methodology for MPCE comparison

While NSSO provides data on MPCE it does so at prices prevailing in the year of this survey. This often causes problems in comparisons over time. For the purpose of comparison of MPCE of different rounds, the household MPCE at current prices has been converted into constant prices (43rd round i.e.1987-88 prices) using the deflators published in various publications of the Planning Commission (NSSO 61st Round 2006).

In case of rural areas, the Planning Commission has derived deflators from Consumer Price Index (CPI) for agricultural labourers with base 1986-87. For this year the price index = 100. In urban areas, the deflators have been derived from CPI for urban non-manual employees with base 1984-85. (Price index=100). The deflators used for different rounds in rural and urban areas are given Table 4.

Table 4: Price Index used to derive MPCE in constant prices

NSSO rounds	Deflator – Rural (CPIAL)	Deflator - Urban (CPIIW)
50 th	176	173
55 th	271	271
61 st	319	338
66 th	494	503

(Source: Planning Commission)

Therefore the consumer expenditure figures (reported in this study) are inflation neutral.

Table 5: Percentage increase in deflator (Rural & Urban) over previous rounds

NSSO rounds	Rural				Urban			
	50 th	55 th	61 st	66 th	50 th	55 th	61 st	66 th
50 th		54%	81%	181%		57%	95%	191%
55 th			18%	82%			25%	86%
61 st				55%				49%
66 th								

(Source: Author's calculation using Planning Commission data)

The growth in deflator in rural areas from 61st to 66th round was 55 per cent which is highest in comparison with the growth deflator during earlier rounds. Similarly, growth in deflator in urban areas from 61st round to 66th round was 49 per cent, which is highest in comparison with the growth in deflator during earlier rounds.

3.10 NSSO data concepts

In the NSSO data a group of people generally living together and eating food from a regular kitchen is termed as a Household. The number of people ordinarily living in the house is counted as Household size (HHS).

Expenditure incurred by a household on domestic period for a particular reference period is called Household Consumer Expenditure (HCE). The ratio of HCE and

Household Size (HS) is the average consumer expenditure per person per month and this is termed as monthly per capita expenditure (MPCE).

3.11 Poverty estimates

The literature review records the various official and non-official poverty estimates. Using secondary data from the NSSO reports, the rate of decline in poverty for the period 1993-94 to 2011-12 and 2004-05 to 2011-12 have been calculated using Compound Annual Rate of Growth (CARG). Number of years required to nearly eradicate poverty from the country based on the existing CARG have also been worked out.

Further, we also provide our own estimates of poverty and inequality based on the unit level of data.

3.12 Relationship between inequality, poverty and per capita consumption

In order to ascertain the relationship between inequality, poverty and per capita consumption, using survey reports of NSSO, correlation coefficients have been worked out.

3.13 Inequality

Gini coefficient is the commonly used measure to examine the income inequalities or expenditure inequalities. Our study uses inter-period for comparison of household consumption expenditure inequalities.

For a perfectly equal distribution, there would be no area between the 45 degree line and the Lorenz curve -- a Gini coefficient of zero (World Bank 2016b). For complete

inequality, in which only one person has any income (if that were possible) the Lorenz curve would coincide with the straight lines at the lower and right boundaries of the curve, so the Gini coefficient would be one. Real economies have some, but not complete inequality, so the Gini coefficients for are between zero and one.

The classical definition of G appears in the notation of the theory of relative mean difference (Bellù and Liberati 2006):

$$G = \frac{\sum_{i=1}^n \sum_{j=1}^n |x_i - x_j|}{2n^2 \bar{x}} \text{----- (1)}$$

- where x is an observed value, n is the number of values observed and \bar{x} is the mean value. i and j are the ranks are observed value.

If the x values are first placed in ascending order, such that each x has rank i , the computation is quicker:

$$G = \frac{2}{n^2 \bar{x}} \sum_{i=1}^n i(x_i - \bar{x})$$

$$G = \frac{\sum_{i=1}^n (2i - n - 1)x_i}{n \sum_{i=1}^n x_i} \text{----- (2)}$$

Where x is an observed value, n is the number of observations and i is the rank of values in ascending order, G is the Gini coefficient.

3.14 A Comparative Analysis of MPCE - Proportion and Growth

In our attempt to understand the trend in MPCE we calculate the proportion of various food and non-food items to total expenditure.

Along with All India consumption expenditure, we do state level comparison of Goa and six other major states- Bihar, Karnataka, Kerala, Maharashtra and Punjab which represent the poor and rich states. Kerala has highest HDI and Goa, economically and socially developed state. Mean and median of consumption expenditure of major food and non-food items are compared.

3.15 MPCE Variation in Social Group and Religion

Apart from a state-level analysis we wanted to understand the consumption among different social groups and religion.

Multivariate statistical techniques provide a very useful tool for analysing and describing large survey data sets which consists of two or more samples and multiple variables. Analysis is performed on the means of variables as well as differences from those means (Punt, Pauw, and Mohube 2003). Multivariate testing is a method used for testing a hypothesis which contains multiple variables. The purpose of this test is to decide the combination of variation that performs the best out of all the possible combinations.

The total number of variations in a multivariate test will always be:

[Number of variations on element A] X [number of variations on element B] = [total number of variations]

The advantages of these tests are:

1. Helpful to study the multiple variables
2. It can also eliminate the need to run several sequential tests. Instead the tests are run all together with a greater number of variations in less time.

Demerits of Multivariate testing

1. The tedious to reach meaningful results

2. Due to the factorial nature of these tests the number of variations in a test can increase quickly.

Wilks' lambda: Wilks' lambda is a test statistic used in multivariate analysis of variance (MANOVA) to test whether there are differences between the means of identified groups of subjects on a combination of dependent variables. Wilks' lambda performs, in the multivariate setting, with a combination of dependent variables, the same role as the F-test performs in one-way analysis of variance. This makes it easier to calculate the P-value.

3.16 MPCE Variation in rural and urban sectors over four rounds in India and Goa

The mean value of a single variable between two samples is compared using t-test, which is based on the assumption that the variable follows a normal distribution. In our study it is conducted to find out the variations in the MPCE of rural and urban sectors.

3.17 Inequality Decomposition

To understand the inequality in different social groups and among major religions in India, the inequality decomposition is measured using Stata. This analysis consists of percentile ratio, Generalised entropy index, Gini coefficient and Atkinson index. The entropy measures have the desirable property of being decomposable so that inequality within a group (intra-group inequality) and between groups (inter-group inequality) can be estimated (World Bank 2016a).

Generalized Entropy (transfer sensitivity parameter α), Advantage: subgroup decomposability,

$$I_{GE}^{\alpha}(F) = \frac{1}{\alpha^2 - \alpha} \int \left[\left[\frac{x}{\mu(F)} \right]^{\alpha} - 1 \right] dF(x), \alpha \neq 0, 1 \quad \text{----- (3)}$$

$$I_{Theil}(F) = \int \frac{x}{\mu(F)} \log \left(\frac{x}{\mu(F)} \right) dF(x), \alpha \rightarrow 1 \quad \text{----- (4)}$$

$$I_{MLD}(F) = - \int \log \left(\frac{x}{\mu(F)} \right) dF(x), \alpha \rightarrow 0 \quad \text{----- (5)}$$

Where, F is probability distribution, μ is the mean, x is the variable and MLD = Mean Logarithmic deviation.

The famous entropy measures are Theil's T and Theil's L measures. These allow us to decompose inequality into the component that is attributable to inequality and differences within areas (e.g. rural, urban,) and income groups.

The Atkinson index (also known as the Atkinson measure or Atkinson inequality measure) is a measure of income inequality developed by British economist Anthony Barnes Atkinson. The measure is useful in determining which end of the distribution contributed most to the observed inequality. It is often helpful to decompose inequality by occupational group, or by source of income, in order to identify policies that would help moderate inequality (Biewen and Jenkins 2005).

$$I_A^{\epsilon} = 1 - \frac{1}{\mu(F)} \left[\int x^{1-\epsilon} dF(x) \right]^{\frac{1}{1-\epsilon}} \quad \text{----- (6)}$$

The Atkinson's index varies between 0 and 1. The index becomes more sensitive to changes at the lower end of the income distribution as ϵ approaches 1.

Where, ϵ = inequality aversion parameter, x = variable and μ = mean.

3.18 Poverty Decomposition

To understand the poverty head count ratio, poverty gap, etc, in rural and urban sectors in India and Goa on four rounds, the poverty decomposition is measured using Stata.

3.18.1 Poverty line: Poverty line is determined by Planning Commission on the basis of data provided by NSSO. It is the income or consumption expenditure level that is considered to represent the minimum desirable standard of living in a society for all its citizens. This minimum level may be defined in absolute or relative terms. The absolute poverty line is often defined as the threshold income that just meets food expenditure corresponding to minimum energy (calorie) need of an average person and makes a small allowance for non-food expenditure. (Radhakrishna and Panda 2006)

3.18.2 Head count ratio (HCR): It is the proportion (or percentage) of persons in a society whose income or expenditure falls below the poverty line. It is the most commonly used measure of poverty. (Venu B. N, Umesh K. B, and Mirajkar 2015)

$$HCR = \frac{m}{n} \text{-----} (7)$$

Where, m= no. of poor population, n = total population,

z= poverty line, yi =income of i-th person

3.18.3 Poverty gap (PG): It refers to the proportionate shortfall of income of all the poor from the poverty line and expressed in per capita terms of the entire population. It tells us whether the poor are more or less poor and thus reflects the average depth of poverty. If the numbers of poor and total population are the same in two societies but the poor have less income in the second society than the first, PG index would be

higher for the second society even though HCR is the same for the two. (Venu B. N, Umesh K. B, and Mirajkar 2015)

$$PG = \left(\frac{1}{n}\right) \sum_{i=1}^m \left(\frac{z - y_i}{z}\right) \text{-----} (8)$$

Where, z= poverty line, yi =income of i-th person

m= no. of poor population, n = total population.

3.18.4 Squared poverty gap (SPG): It is a normalized weighted sum of squares of the poverty gaps of the population and reflects the intensity of poverty. For a given value of the PG, a regressive transfer among the poor would indicate a higher SPG value. HCR, PG and SPG are special cases of a measure suggested by Foster, Greer and Thorbecke (1984).

$$P\alpha = (1/n) \sum_{i=1}^m ((z - y_i)/z)^\alpha \text{-----} (9)$$

$$SPG = \left(\frac{1}{n}\right) \sum_{i=1}^m \left(\frac{z - y_i}{z}\right)^2 \text{-----} (10)$$

Where, m= no. of poor population, n = total population,

z= poverty line, yi =income of ith person

α =0 generates the HCI α =1 generates the PGI α =2 generate the SPG

FGT is a popular class of measures of poverty and by varying the degree of poverty aversion, it can be seen that it condense the concept of HCR along with other measures of poverty. Where, n is population size z is the poverty line. When α=0 the FGT measure reduces to the HGR α=1 results in poverty gap index α=2 results in squared poverty gap index. (Venu B. N, Umesh K. B, and Mirajkar 2015)

3.18.6 Engel Curve Analysis: To find out the trend of food proportion to total household expenditure, the Engel curve analysis is used by constructing a two-way scatter analysis. The Engel curve indicates that for essential items, there is a concave curve showing an increase of expenditure on essential goods like food items at a decreasing rate. The opposite is the case of luxurious goods. In our study an attempt is made to include the Engel curve analysis to explain the increase of expenditure on food proportion to total expenditure during the three quinquennial rounds.

3.18.6 Kernel Density Curve: To find out the density and probability of normality of the consumption expenditure on food items, the Kernel density curve is used.

3.18.7 Regression analysis: Regression analysis is also used to find variations in consumption expenditure of the different social groups in urban and rural areas of major religions, viz, Hindu, Islam and Christianity in different rounds.

The next chapter discusses the various official and non-official estimates on poverty and author's calculations using CARG and poverty decomposition analysis.

Chapter 4

India's Poverty Estimate – a Review

4.1 Introduction

Poverty and inequalities are considered as the major obstacles which act as hurdles to economic growth and development. They lead to inefficiency and dependency. The main cause of lack of capability in Under Developed Countries (UDCs) and Developing Countries (DCs) is low Gross Domestic Product (GDP), and low productivity which perpetuate poverty. Poverty is cumulative in nature which may generate a vicious circle of poverty. This is because in poor countries the rate of savings and rate of capital formation or investment is low. Thus vicious circle of poverty embraces the whole economy (Bass 2016).

The study of poverty is extremely important on moral philosophical and also, political grounds. Further, poverty and inequality affects growth adversely. The concept of poverty is associated with socially perceived deprivation with respect to basic human needs- food, clothing, shelter, health and education as well as the need to be mobile for purposes of social interaction and participation in economic activity. Thus, the concept of poverty is multi-dimensional (material and non-material dimensions) (UNDP International Poverty Centre 2006). While measuring poverty line, the focus generally has been on the material dimensions and only on minimum consumption requirements. In other words, absolute (private) consumption poverty line conveys the inability of an individual or household to afford a socially perceived normative minimal basket of basic human needs that is expected to be reflected in

some normative minimal standard of living that should be assured to every households.

4.2 Various poverty estimates

The official poverty estimates of the Planning Commission have received criticism in terms of methodology adopted and the extent of poor in India. There are poverty estimates evolved by various experts like Utsa Patnaik, Deaton, Tendulkar, etc using different methods and thus their poverty estimates vary significantly. Thus, in view of different poverty estimates being available, the debate on extent of poverty in India has become intense with claims and counterclaims. The first poverty line was recommended in 1962 by a Working Group comprising of experts that was set-up by the Planning Commission, Government of India (Planning Commission 1993). A normative criterion is used to define the absolute poverty line which in this case is the average daily calorie requirement (RDA or Required Daily Allowance) of a person – 2400 in rural areas and 2100 in urban areas. In rural areas state-specific CPI for agricultural labourers, (CPIAL) and in urban areas for industrial workers, (CPIIW) are used for updating the rural and urban poverty lines. The national poverty line is implicitly estimated by identifying that per capita expenditure level which if used as the poverty line will yield the same number of poor persons. Thus, the official poverty estimates of India released by the Planning Commission of India based on the ‘fixed consumption basket’ norm for different years are 56.4 per cent for 1973-74, 53.1 per cent (1977-78), 45.7 per cent (1983), 37.3 per cent (1993-94), 27.4 per cent (1999-2000) and 29.5 per cent (2004-05), revised (Tendulkar Committee, Expert Group estimate is 37 per cent (2004-05).

Table 6: Summary of major poverty estimates

Authors	Poverty Rate (%)	Poverty Line (Rs.)
Dandekar and Rath (1971)	Poverty 1968-69 Rural 40% , Urban 50%	PCE Rs.15 at 1960-61 prices (R) Rs. 22.5 (U) necessary for minimum level of living.
(World Bank 2005)	52.4% (1970), 42.5% (1983), 39.4% (1988)	_____
Planning Commission (1993)	Rural Poverty – 56.4% (73-74) to 39.1% (87-88) Total Poverty: 54.9% to 39.3%	_____
Minhas B.S., Jain L.R, and Tendulkar (1991)	1987-88 Rural 44.8%, Urban 36.5%	Rs. 122.6 (R), Rs. 158.3 (U)
(GOI, PC 2014) Official Estimate PC 1983-84	Rural 45.7%, Urban 40.8%, Combined 44.5%	Rural Rs. 89.5, Urban Rs.115.65
(GOI, PC 2014) Official Estimate PC 1993-94	Rural 37.3%, Urban 32.4%, Combined 35.6%	Rural Rs. 205.84, Urban Rs.281.35
Report of the Expert Group (2014) Official Estimate PC 1999-2000	Rural 27.1%, Urban 23.6%, Combined 26.1%	Poverty Line Rural Rs. 327.56, Urban Rs.454.11
Deaton and Dreze (2002) Adjusted Estimates 1999-2000	Rural 30.2%, Urban 24.7%	_____
(Sen and Himanshu 2004)	Rural 28.8%, Urban 25.1%	_____
Patnaik (2008)	Rural 74.5%, Urban 44%	_____
(NSSO 2006) Official Estimate PC 2004-05	Rural 28.3%, Urban 25.7%, Combined 27.5%	Poverty Line Rural Rs. 356.0, Urban Rs.538.0
(GOI, PC 2009) Tendulkar Committee 2004-05	Rural 41.8%, Urban 25.7%, Combined 37.2%	PL R- Rs.446.68 U -Rs.578.80 The PLB comprises data pooled from different sources, different periods and different samples.
(GOI, PC 2014)	Rural 56.4%, Urban 49.0%, Combined 54.9%	Rural Rs. 49.63. Urban Rs. 56.76

(Author's compilation from various sources)

According to a 2005 World Bank estimate, 41.6 per cent of the total India's population falls below the international poverty line of US\$ 1.25 a day (PPP, in

nominal terms Rs. 21.6 a day in urban areas and Rs. 14.3 in rural areas) (World Bank 2005). In India, official poverty figures are estimated and released by the Planning Commission of India. The existing all India rural and urban poverty lines, anchored on per capita calorie norms of 2400 (rural) and 2100 (urban) were originally defined in terms of per capita total consumer expenditure (PCTE) at 1973-74 market prices and adjusted overtime across States for changes in prices. The all India poverty line so defined in 1973-74 was Rs. 49.63 for rural areas and Rs. 56.64 for urban areas.

One of the criticism on the official poverty estimate is that the poverty line only considers the minimum nutrition level required to survive and work but does not consider other necessities such as fuel, health services, housing, clothing that are also required for survival and working. This criticism on the official poverty lines after 1973-74 is mainly because the poverty lines after 1973-74 are not based on nutritional and price levels of those years but are derived by upward adjustment on the 1973-74 poverty lines based on CPIAL and CPIIW for rural and urban areas respectively. Therefore, these estimates are criticized as outdated. The changing patterns of consumption of the poor over the years are not reflected in the poverty lines. Crude price adjustment for prices was leading to implausible results such as proportion of total urban population below poverty line being higher than its rural counterpart in certain major states. No account was taken of either the increase in the proportion of these in total expenditure over time or of their proper representation in available price indices (Bapat 2009).

In addition to the official estimates of the Planning Commission there are various other poverty estimates by different researchers. In view of significant difference between the official poverty estimates of the Planning Commission and the estimates

of other experts there has been continuous debate on the reliability of methodology used for poverty estimation and the extent of poverty in India. We attempt to summarise various official and non-official poverty estimates in India since 1960s.

4.3 Major Non-official poverty estimates

4.3.1 Poverty levels around 1960s

Different studies indicate fluctuations in poverty levels around 1960s. Minhas B.S., Jain L.R, and Tendulkar (1991) have indicated that the percentage of the rural poor declined during the period 1956-57 to 1967-68. On the other hand Ojha and Bardhan (1970) indicate the increasing proportion of the rural poor. In their view, the direction of change indicates a trend of growing pauperization. Dandekar and Rath (1971) have shown a constant proportion of both the rural and the urban poor during the period 1960-61 and 1967-68. However, in their estimate there was an absolute increase in the rural poor from 135 million to 166 million and in the urban poor from 42 million to 49 million. In general, a pattern of fluctuation with the incidence of rural poverty falling in periods of good agricultural performance and rising in period of bad agricultural performance was observed.

4.3.2 Non-official poverty estimates in 1980s

Dandekar and Rath (1971) estimated that in 1983-84, a total of 286 million (44.4 per cent) persons were living below the poverty line. Datt and Ravallion (2010) also estimated that in 1983, persons below the poverty line were 43.9 per cent comprising 40 Percent in urban and 45 per cent in rural areas. Minhas, Jain, and Tendulkar (1991) in their study found that the incidence of poverty in 1987-88 at the all India level was 44.8 per cent and 36.5 per cent respectively in rural and urban India and

the overall poverty was 42.7 Per cent. In absolute terms 361 million were counted as poor in 1987-88 comprising 284 million in rural areas and 77 million in urban areas.

4.3.3 Poverty estimates for 1999-2000

a) Poverty estimates by Deaton and Dreze

Deaton Angus and Dreze Jean (2002) evolved adjusted poverty estimates for 1999-2000 (55th round) so as to make them comparable with earlier official estimates. They obtained 'adjusted' 55th round poverty counts using only the URP from 50th round. According to them, instead of there being a 10.2 per cent drop in rural poverty since 1993-94, the adjusted figures show a reduction of only 7.0 percentage points. So, a little more than two-thirds of the reduction in the official estimates was validated by them. On the other hand the reduction in urban poverty from 1993-94 to 1999-2000 as per adjusted figures was higher. They found a 9.1 percentage points reduction as against official counts being 7.9 percentage points. In summary Deaton opined that the official poverty counts based on the 30-day questionnaire were not seriously misleading, though in the rural sector, it appears that only around two-thirds of the officially measured decline in poverty was real. The other third was presumably induced by changes in the survey instruments between the 50th and 55th rounds.

b) Poverty Estimates for 1999-2000 by Sen and Himanshu

Sen and Himanshu (2002) observed that survey rounds prior to the 55th round used URP, and the thin sample prior to 50th round did not include 365 day questions, but for only five low frequency items 50th round included 30 days and 365 days questions. Thus, distributions and poverty ratios using the MRP used officially from 55th round can be obtained from 50th round unit level data. This can eliminate the comparability difficulties. But, they analysed that only partial problem is resolved.

There is no comparability in Mixed Recall Period estimates of 50th and 55th rounds as one recall period's question is affected by another recall period's answer and this will probably lead to the contamination of data. It may be due to the following reasons:

- i) Questions and answers on low frequency things asked for 365 days in 50th round may be influenced by the existence of 30 day questions on those items which were not asked during 55th round.
- ii) Questions and answers on food and intoxicants for the 30 days during the 55th round may be influenced by the existence of 7 day question which were absent in the 50th round.

However, there is absence of in-survey test to 365-day questions as they are influenced by presence/absence of 30-day questions in the same questionnaire. Similarly, there was absence of in-survey study regarding how no in-survey assessment has been done of how concurrent occurrence of 7 day queries that may be manipulated by the 30 day responses.

Sen and Himanshu (2002) noted that Sundaram and Tendulkar (2003a and 2003b) had erred in their argument against contamination i.e. to claim that 50th round MRP estimates are comparable to 55th round consumer expenditure survey. As a result of oversight, Sundaram & Tendulkar overestimated 50th round poverty. Sen and Himanshu (2002) and (Sen and Himanshu 2004) also advocated about the overestimation of poverty in the 55th round. These corrections led to increase in 55th round all-India poverty headcounts as they placed the maximum poverty reduction from 1993-94 to 1999-2000. However, this conclusion contradicted Deaton's claim that the poverty ratio had declined 7 percentage points between rounds 50th and 55th.

c) Poverty Estimates, 1999-2000 by Utsa Patnaik

The official poverty line for the year 1999-2000 was Rs.328/- and thus the poverty ratio turned out to be 27 per cent. But, Patnaik (2008) argued that at this expenditure (i.e. Rs.328/-) any person cannot attain the prescribed calorie norms stated by the 1979 Task Force. Thus, she questioned the reliability of the official poverty estimate. Criticizing the Deaton and Drèze (2002) analysis of food and nutrition in India, she has argued that the analysis is defective as it does not look at direct and indirect cereal consumption and cereal intake and income relation. It is fallacious to argue that the declining cereal consumption reflects a diversification of diets. She also pointed out that the Deaton's and Dreze's critical response to the use of 'direct poverty lines' is misplaced. She has argued that an inverse relation of income and cereal consumption observed by Deaton and Dreze (2002) is not factually correct but the converse proposition hold. Thus, according to her methodology, the average calorie intake per capita in rural areas of India is 2149, which is lower than RDA norm of 2400 calories for rural areas. She has applied this method to different MPCE classes to arrive at rural poverty in India as 74.5 per cent and the urban poverty as 44 per cent. Thus, it is evident that these estimates were significantly higher than the official as well as various other non-official estimates.

4.4 Major official poverty estimates

4.4.1 Official estimates 1973-74, 1983-84 and 1993-94

Planning Commission (1993) estimated that rural poverty ratio had declined from 56.4 Per Cent in 1973-74 to 39.1 Per Cent in 1987-88. The Planning Commission estimates for the year 1973-74, 1983-84 and 1993-94 are given in Table 7.

Table 7: Planning Commission's estimates 1973-74, 1983-84 and 1993-94)

Area	1973 – 74		1983 – 84		1993 – 94	
	Poverty Line (Rs)	Percentage of persons	Poverty Line (Rs)	Percentage of persons	Poverty Line (Rs)	Percentage of persons
Rural	49.63	56.4	89.50	45.7	205.84	37.3
Urban	56.64	49.0	115.65	40.8	281.35	32.4
Combined	-	54.9	-	44.5	-	35.6

Source: Sen and Himanshu (2002), *RBI (2009)*

During 1973-74, more than 50 per cent of the people were living below poverty line. Over the two decade period 1973-74 to 1993-94, there was a perceptible decline in the incidence of poverty from 54.9 Per Cent to 35.6 Per Cent. However, since the population had increased considerably over the period, the absolute number of poor people did not decline.

4.4.2 Official estimates, 1999-2000

The Planning Commission, based on the 55th Round of the NSSO released two separate estimates of incidence of poverty for 30 day recall period and 7 day recall period (Table 8). The poverty estimate based on 7 day recall period was slightly lower than the 30 day recall period.

Table 8: Poverty estimates based on the 55th NSS round (1999-2000) (Per cent)

Reference Period	All India	Rural	Urban
30 day recall	26.10	27.09	23.62
7 day recall	23.33	24.02	21.59

Source: Planning Commission, Results reproduced in Government of India, Ministry of Finance, Economic Survey, 2000-2001.

Official 55th round estimates are based on the 30-day recall for food and intoxicants from consumer expenditure survey, which asked both 7 and 30-day questions on these items. In view of mixed recall periods used in the 55th NSS round, there were doubts about their comparability with the earlier large sample surveys. Thus, keeping in mind the lack of comparability in the methodology, some studies attempted to generate adjusted poverty estimates.

4.4.3 Official Poverty Estimates, 2004-05

The PC has released the official poverty estimates for 2004-05 based on the large sample survey data on household consumer expenditure (NSS 61st Round) in 2009. The data were collected on uniform recall period (URP) using 30 days for all items. The Planning Commission has estimated poverty in 2004-05 using both the distributions (URP and MRP) (GOI, PC 2007, 2004–05). PC estimates based on URP indicate 28.3 per cent of rural population and 25.7 per cent of the urban population was below the poverty line. For the country as a whole 27.5 per cent of total population was below the poverty line in 2004-05. The corresponding figures obtained from MRP indicate poverty estimates of 21.8 per cent in rural areas, 21.7 per cent in urban areas and 21.8 per cent for the country in 2004-05.

4.4.4 Poverty Estimates for 2004-05 – Tendulkar Committee

The PC constituted an Expert Group under the chairmanship of Tendulkar to examine the issue of poverty in entire and suggest a new poverty line and estimates in December 2005. The Committee submitted its report in November 2009 (GOI, PC 2009). Two basic problems with the existing poverty line identified by the Expert Group were (a) out-dated consumption patterns of 1973-74, which have changed even among the poor during the accelerated growth process; and (b) out-dated weights, as well as price base of the segment-specific price indices used in updating the 1973-74 base poverty lines. Although the Committee has not relied on calorie based norms, it has quantified the calorie implications of the new poverty line proposed by it. The Committee has stated that “it may be noted that although those near the poverty line in urban areas continue to afford the original calorie norm of 2,100 per capital per day, their actual observed calorie intake from 61st Round of

NSSO is 1,776 calories per capita. This actual intake is very close to the revised calorie intake norm of 1,770 per capita per day currently recommended for India by the Food and Agriculture Organisation (FAO). Actual observed calorie intake of those near the new poverty line in rural areas (1999 calories per capita) is higher than the FAO norm” (GOI, PC 2009).

The Tendulkar Committee (GOI, PC 2009) has estimated the new all India poverty line for the year 2004-05 for rural areas at Rs. 446.68 per capita per month and for urban areas at Rs. 578.80 per capita per month. Thus, the poverty estimates based on existing methodology (official) and Tendulkar Methodology for the years 1993-94 and 2004-05 are given in Table 9.

Table 9: Poverty Estimates for 1993-94 and 2004-05

Year	Existing Methodology			Tendulkar Methodology		
	Rural	Urban	Combined	Rural	Urban	Combined
1993-94	37.3	32.4	36.0	50.1	31.8	45.3
2004-05	28.3	25.7	27.5	41.8	25.7	37.2

Source: (GOI, PC 2009)

It is evident from Table 9 that if poverty line of the 50th round is computed using the new methodology, the number also goes up because the rural poverty line itself has been raised. Whether we use the new methodology or the old, it may be seen that decline in the percentage of population in poverty, is roughly of the same magnitude. The PC has accepted the Tendulkar methodology for the present. According to the PC, the new methodology would be applied to the next NSSO large sample survey data for 2009-10. A final view on the methodology for measuring poverty in future will be taken on the basis of the results obtained from the 2009-10 survey. At that stage the Commission will consider whether some entirely new approach to poverty

measurement is needed, or whether the Tendulkar Committee methodology, with some modification could continue to be the basis of poverty estimate for some time.

4.5 Rate of Decline of poverty in India

The official estimate of poverty in India for 1993-94, 2004-05 and 2011-12 based on Tendulkar Committee methodology along with their Compound Annual Growth Rate (CARG) are given in Table 10.

Table 10: Compound Annual Growth Rates in Poverty 1993-94 to 2011-12

Year	Poverty estimates (per cent)			CARG (per cent)		
	Rural	Urban	Combined	Rural	Urban	Combined
Official estimates based on Tendulkar Methodology						
1993-94	50.1	31.8	45.3			
2004-05	41.8	25.7	37.2	-1.63	-1.92	-1.77
2011-12	25.7	13.7	21.9	-6.71	-8.60	-7.29
CARG 1993-94 to 2011-12				-3.64	-4.57	-3.96

(Authors Calculations based on Planning Commission)

It is evident from Table 10 that, poverty in India has declined sharply after 2004-05 according to PC estimates. While during the 11 year period from 1993-94 to 2004-05 the combined poverty has declined by 7.9 percentage points, during the 7 year period from 2004-05 to 2011-12, it has declined by 15.3 percentage points. During the period 1993-94 to 2004-05 the combined poverty has declined at a CARG of 1.77 per cent, whereas during the period 2004-05 to 2011-12, it has declined a CARG of 7.29 per cent. The Urban poverty has declined at a faster rate than rural period during both the inter-periods. It is important to note that if the poverty rate continues to decline at a CARG (1993-94 to 2011-12) of 3.96 per cent, then the country would need 76 long years to eradicate poverty or say to reduce poverty from 21.9 per cent (official estimate) to 1 per cent. If the poverty rate decline of 7.29 per cent for the period 2004-05 to 2011-12 is applied then the country would need 41 years to reduce poverty from 21.9 per cent to 1 per cent

In the next section we compare the poverty rates of Goa and India.

4.6 Poverty estimates for Goa and India

The official poverty estimates for Goa during different years estimated by the PC may be seen in Table 11.

Table 11: Poverty rate in India and Goa

Sl. No.	Year	Goa	India
1	1973-74	44.26	54.88
2	1977-78	37.23	51.32
3	1983	18.9	44.48
4	1987-88	24.52	38.86
5	1993-94	14.92	35.97
6	1999-2000	4.4	26.1
7	2004-05 (PC)	13.8	27.5
8	2004-05 (TC)	25	37.2

Source: (GOI, PC 2009)

It is evident from the Table 11 that the poverty estimates show an irregular trend in Goa. The estimate show a decline in poverty from 1973-74 to 1983 and thereafter poverty showed an increase in the year 1987-88. But, it again showed a declining trend in the year 1993-94 and 1999-2000. But, the Planning Commission estimates for the year 2004-05 again shows higher level of poverty in Goa and the poverty estimate by the Tendulkar Committee shows a still higher figure. On the other hand the official poverty estimates of India show a continuous declining trend and only the Tendulkar estimate for the year 2004-05 indicate higher level of poverty.

In the next section we present the poverty decomposition of India.

4.7 Poverty Decomposition

After discussing the various estimates – official and non –official of poverty in India by various authors we now discuss the issue of poverty decomposition. Poverty

Decomposition is one of the analyses of our study, which calculates the contribution of some major measures that used to the evaluation of the poverty. In this section analyse poverty in India using NSSO unit level data. Poverty decomposition for 50th, 55th, 61st and 66th round has been worked out using official poverty lines of Planning Commission of India for respective years based on Foster, Greer, Thorbecke measure.

The FGT class is based on the normalized gap (J. Foster, Greer, and Thorbecke 1984).

$$g_i = (z - y_i)/z \text{-----}(11)$$

Refer equation (9), i.e, FGT formula, $P_\alpha = (1/n) \sum_{i=1}^m ((z - y_i)/z)^\alpha$

Where, i is poor person.

Normalised gap of a poor person is the income shortfall expressed as a share of the poverty line. Viewing g_i^α as the measure of individual poverty for a poor person and 0 as the respective measure for non-poor persons, P_α is the average poverty in the given population. The case $\alpha = 0$ yields a distribution of individual poverty levels in which each poor person has poverty level 1; the average across the entire population is simply the headcount ratio P_0 or H . The case $\alpha = 1$ uses the normalized gap g_i as a poor person's poverty level, thereby differentiating among the poor; the average becomes the poverty gap measure P_1 or H_1 . The case $\alpha = 2$ squares the normalized gap and thus weights the gaps by the gaps; this yields the squared gap measure P_2 . As α tends to infinity, the condition of the poorest poor is all that matters. (Foster, Greer, and Thorbecke 2010)

The parameter α has an interpretation as an indicator of “poverty aversion” in that a person whose normalized gap is twice as large has twice the level of individual poverty. Alternatively, α is the elasticity of individual poverty with respect to the normalized gap, so that a 1 per cent increase in the gap of a poor person leads to a α Per Cent increase in the individual’s poverty level. The parametric class of measures gave analysts and policymakers an instrument to evaluate poverty under different magnifying glasses with varying sensitivity to distributional issues (Alkire and Seth 2008).

When $\alpha = 1$, it is summing the relative poverty gap over all poor households and dividing by the total number of households. This poverty gap index (P1) measures the depth of poverty because it is a function both the distance of each poor household from the poverty line and the number of poor. P2 is also a measure of the depth of poverty. It improves on P0 and P1 because it also takes into account the inequality amongst the poor. In fact, it can be shown that P2 can be decomposed so that it is made up of two components: an amount due to the poverty gap and an amount due to the inequality among the poor, measured in terms of the coefficient of variation. (Alkire and Seth 2008)

We have undertaken poverty decomposition indices using FGT methodology for four rounds of NSSO that are given in Table 15. The table gives poverty line (PL) taken from the published official documents of Planning Commission of India. This is used for calculating poverty decomposition indices both in rural and urban areas. The decomposition indices comprise Head Count Ration (HCR), Poverty Gap Ratio (PGR) and Foster, Greer, Thorbecke (FGT) ratio.

Table 12: Poverty Decomposition using FGT measures

NSS Round/ Year	Rural				Urban			
	PL (Rs.) Current Prices	HCR	PGR	FGT	PL (Rs.) Current Prices	HCR	PGR	FGT
50 th (1993-94)	205.84	27.91	6.16	2.03	281.35	24.26	5.67	1.98
55 th (1999-2000)	327.56	19.41	3.68	1.08	454.11	16.17	3.40	1.08
61 st (2004-05)	446.7	33.44	7.91	2.72	578.8	31.11	8.05	2.92
66 th (2009-10)	672.8	23.86	5.11	1.66	859.6	22.85	5.89	2.15

(Source: Author's calculation based on NSSO data)

It is evident from Table 12 that poverty line (in Current Prices) in rural area has increased by 226.9 per cent from 1993-94 to 2009-10. However, the head count ratio during this period in rural areas has declined marginally from 27.91 per cent to 23.86 per cent. It may also be seen that the poverty gap ratio too has declined marginally from 6.16 per cent to 5.11 per cent during the same period in rural areas. The poverty severity index (FGT) in rural areas reveals that the severity of poverty has declined from 2.03 per cent to 1.66 per cent during the period under consideration (1993-94 to 2009-10).

As regards urban poverty it may be noted that the poverty line (in Current Prices) has increased by 205.2 per cent from 1993-94 to 2009-10. The head count ratio has declined marginally from 24.26 Per Cent to 22.85 per cent. However, the poverty gap ratio and poverty index has increased during the period under consideration.

It may also be seen from Table 12 that the poverty decomposition indices show irregular trend in the four rounds of NSSO. While from 50th round to 55th round the indices show a sharp decline, from 55th round to 61st round the indices show a sharp increase and thereafter show a decline in the 66th round. It is important to note that these indices are directly related to the poverty line of respective years. It may also be noted that increase in poverty line from round to round is irregular. In rural areas, while the poverty line has increased by 59.1 per cent from 50th to 55th round, it has

increased only by 36.4 per cent from 55th to 61st round and 50.6 per cent from 61st to 66th round. Similar is the trend in urban areas. In urban areas, while the poverty line has increased by 61.4 per cent from 50th to 55th round, it has increased only by 27.5 per cent from 55th to 61st round and 48.5 per cent from 61st to 66th round. The irregular change in poverty line is one of the reasons for the irregular trend in poverty decomposition indices in different rounds.

4.8 Conclusion

The official poverty estimates in India were anchored on 1973-74 poverty lines based on the minimum calorie norm and there has been no attempt to update the same. Changes in the prices of goods and services and inflation also cause variations in the expenditure patterns of the people and poverty lines. Adjusted price ratios are likely to give misleading picture of changes in living standards and inequality. Therefore, there is a need to evolve new poverty line at current prices taking into consideration changing consumption pattern of both food and non-food items.

Considering changing consumption patterns and shift in monthly per capita expenditure from food to non-food items there has been divergent views on poverty estimation methodology. On account of various assumptions and adjustments used in both official and non-official poverty estimates, there is no consensus so far on a particular methodology. The Planning Commission has accepted the Tendulkar Methodology (2004-05 poverty estimate) for the present with a caution that the methodology will be used for 2009-2010 large sample round of NSS and a decision would be taken later whether to adopt the Tendulkar methodology with some corrections or to attempt entirely a new approach for poverty measurement.

Whatever is the methodology for estimation of poverty, it is a matter of concern that the number of poor in absolute terms is increasing mainly because growth in population is higher than the rate of poverty reduction. Therefore, the real issue is not the methodology of estimation but the existence of widespread poverty and its very poor reduction rate.

On the other hand, poverty analysis using FGT methodology based on unit level data of National Sample Survey Office, Government of India reveals that the head count ratio of poverty has declined marginally from 27.91 per cent in 1993-94 to 23.86 per cent in 2009-10 in rural areas. In urban areas poverty head count ratio has declined from 24.26 per cent to 22.85 per cent during the same period. While in rural areas poverty gap ratio and poverty severity index shows declining trend, in urban areas these ratios have increased during the period 1993-94 to 2004-05.

Thus, it is evident that poverty estimates in India are not uniform and they vary based on the methodology adopted for the purpose. Different methodology gives different poverty estimates. Therefore, the extent of poverty in India and the methodology used for its estimates is still a grey area.

In the next chapter we are examining the trends in India's consumption patterns, i.e., changes in the consumption of major food and non-food items of the people over the four rounds of NSSO using unit level data.

Chapter 5

Transition in India's Consumption patterns

5.1 Introduction

Our study throws light on the consumption pattern on India. The analysis relies on the NSSO unit level data of four quinquennial rounds, i.e., 50th (1993-94), 55th (1999-2000), 61st (2004-2005) and 66th (2009-2010) rounds. In this chapter the transition or trends of consumption patterns of Indian households in these four rounds are compared and analysed. The analysis is with respect to different household characteristics like household types, sex, religion, social group and marital status. Monthly Per Capita Consumption Expenditure (MPCE), and average consumption of people in purchase of different items consumed in Rupees, etc., is compared.

5.2 Primary Source of energy for cooking

The distribution of households using various sources of energy for cooking in the 50th, 55th, 61st and 66th round may be seen in Table 16. The main source of energy for cooking during 50th round (1993-94) was firewood chips followed by LPG, kerosene, dung cake, coke, coal, charcoal, and gobar gas. In 55th round (1999-2000), the consumption of LPG increased substantially. This trend continued in the 61st round, where there is a further increase in the consumption of LPG and decreased consumption of kerosene. In recent 66th round (2009-10) there was much increase in the use of LPG (38.78 per cent) followed by firewood and a very meagre use of gobar gas, kerosene and others. There is a decline in the use of firewood chips from 59.85 per cent in 50th round to 50.11 per cent during 66th round. This shows that the

traditional method of using firewood, kerosene and other method of cooking was declining in recent years and LPG is gaining its popularity.

Table 13: Primary Source of energy for cooking (Per cent)

Cooking Source	50 th Round	55 th Round	61 st Round	66 th Round
Coke, Coal	2.99	2.59	1.62	1.36
Firewood Chips	59.85	53.27	56.87	50.11
LPG	15.08	24.20	28.38	38.78
Gobar gas	0.37	0.27	0.18	0.14
Dung cake	6.99	6.51	5.13	3.35
Charcoal	0.15	0.12	0.10	0.10
Kerosene	9.96	9.43	4.00	2.72
Electricity	2.68	0.21	0.11	0.21
Other	2.08	1.53	1.82	1.34
No cooking arrangement	--	1.87	1.79	1.89
Total	100	100	100	100

(Source: Author's calculation based on NSSO data)

In the 66th round the Monthly Per Capita consumption expenditure of households using LPG as primary source of energy for cooking was highest followed by gobar gas and electricity both in rural and urban areas (Table 14). Importantly, MPCE of households where there was no cooking arrangement is more in urban areas than in rural areas in all the rounds.

Table 14: Primary Source of energy for cooking, MPCE (Rs.) at constant prices

Cooking Source	50 th Round		55 th Round		61 st Round		66 th Round	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Coke, Coal	205.64	225.78	195.57	237.64	195.94	194.22	211.26	187.37
Firewood Chips	177.31	200.87	192.99	217.71	189.71	176.93	204.08	197.08
LPG	400.52	488.61	397.79	475.65	387.17	422.58	374.70	446.73
Gobar gas	289.26	419.32	371.22	327.68	312.16	416.23	393.43	395.35
Dung cake	179.54	208.40	196.68	228.41	195.85	186.15	216.39	190.55
Charcoal	255.72	295.53	231.73	308.49	264.00	233.67	288.45	235.96
Kerosene	333.15	308.02	322.14	323.25	282.56	261.78	304.60	301.37
Electricity	152.70	262.84	352.03	447.97	341.34	370.57	313.33	409.10
Other	302.84	520.77	166.42	289.30	155.27	220.89	179.00	289.29
No cooking arrangement	--	--	368.27	518.08	313.99	499.82	438.91	605.35

(Source: Author's calculation based on NSSO data)

5.3 Primary source of energy for lighting.

The distribution of households using primary source of energy for lighting in 50th, 55th, 61st and 66th round may be seen in Table 15. Electricity as the primary source of energy for lighting increased from 59.93 per cent in 50th round to 68.18 per cent in 55th round, 73.70 per cent in 61st round and 82.23 per cent in 66th round. Consequently, the households using kerosene as primary source of energy for lighting declined from 39.09 per cent in 50th round to 16.73 per cent in 66th round. Evidently, India has managed to connect more than 80 per cent households with electricity that is used for lighting.

Table 15: Primary Source of energy for lighting. (Per cent)

Lighting Source	50 th Round	55 th Round	61 st Round	66 th Round
Kerosene	39.09	30.81	25.50	16.73
Other oil	0.27	0.22	0.13	0.04
Gas	0.07	0.11	0.06	0.09
Candle	0.06	0.09	0.10	0.24
Electricity	59.93	68.18	73.70	82.23
Others	0.17	0.15	0.18	0.29
No lighting arrangements	0.41	0.43	0.34	0.38
Total	100	100	100	100

(Source: Author's calculation based on NSSO data)

Table 16: Expenditure on Primary Source of energy for lighting, MPCE (Rs.) at constant prices.

Lighting Source	50 th Round		55 th Round		61 st Round		66 th Round	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Kerosene	151.63	174.04	167.16	195.94	157.04	158.20	165.39	169.89
Other oil	192.40	270.16	202.58	273.80	164.94	227.72	183.40	240.75
Gas	239.89	407.43	318.45	398.15	327.42	320.69	254.34	308.35
Candle	220.09	396.68	227.31	356.46	183.66	187.91	279.39	373.45
Electricity	235.03	365.66	255.35	394.10	251.93	349.65	266.95	394.19
Others	178.23	298.31	294.10	370.11	197.90	224.42	261.72	361.31
No lighting arrangements	142.60	306.81	203.32	308.12	225.70	290.33	237.38	447.63

(Source: Author's calculation based on NSSO data)

The monthly per capita expenditure of households using electricity as primary source of energy for lighting was highest followed by households using candle, gas and kerosene in all the four rounds (See Table 16)

5.4 Household type

The distribution of households according to household type during 50th, 55th, 61st and 66th rounds in rural and urban India separately may be seen in Table 17. In rural areas over the years the proportion of agricultural households has declined while the non-agricultural households have increased. The households in ‘others’ category has increased from 11.23 per cent in 50th round to 18.83 per cent in 66th round. Similarly, the proportion of self employed in non-agriculture households has increased from 14.99 per cent to 24.63 per cent during the same period. On the other hand the proportion of households in the category of ‘self employed in agriculture’ has declined from 42.16 per cent to 28.09 per cent during the same period. Similarly, the proportion of ‘Agricultural Labour’ type of households has declined drastically from 24.26 per cent to 11.08 per cent. However, the category ‘other labour’ has increased. This confirms that agricultural activity in India has been on the decline over the years. In urban areas comparison of 50th round and 66th round reveals that there was only marginal variation in the proportion of household types of ‘Self employed’ and decline in the regular wage/salary earners. However, the proportion households in the category of ‘casual labour’ has increased and the proportion in the ‘others’ category of households has increased from 8.56 per cent to 11.49 per cent.

Table 17: Distribution of Household by Employment Type (Per cent)

Household Type	50 th Round	55 th Round	61 th Round	66 th Round
Rural				
Self employed in non-agri.	14.99	14.74	22.50	24.63
Agri. Labour	24.26	26.19	14.58	11.08
Other Labour	7.36	7.55	10.88	17.37
Self employed in agri.	42.16	38.02	35.26	28.09
Others	11.23	13.50	16.78	18.83
Total	100.00	100.00	100.00	100.00
Urban				
Self employed	36.86	36.37	39.17	37.38
Regular wage/Salary earning	43.01	41.61	38.54	37.78
Casual Labour	11.57	12.31	12.66	13.35
Others	8.56	9.71	9.62	11.49
Total	100	100	100	100

(Source: Author's calculation based on NSSO data)

Table 18: MPCE of Household Types at constant prices (Rs.)

Household Type	50 th Round	55 th Round	61 th Round	66 th Round
Rural				
Self employed in non-agri.	199.62	226.57	218.14	233.17
Agri. Labour	133.41	155.72	146.60	166.44
Other Labour	168.63	201.85	180.35	194.71
Self employed in agri.	199.83	225.09	224.99	251.97
Others	259.23	293.73	291.60	326.57
Urban				
Self employed	303.94	345.76	299.83	336.63
Regular wage/Salary earning	391.34	428.78	393.28	456.86
Casual Labour	184.79	229.52	180.46	204.03
Others	412.20	447.60	419.88	482.26

(Source: Author's calculation based on NSSO data)

In rural area the MPCE of self employed in non-agriculture sector and others are more than agricultural labour, self employed in agriculture and other labour (See Table 18). The MPCE at constant prices of different household types are showing an increasing trend. In urban areas the MPCE of regular wage/salary earning households and others are more than the self employed and casual labour. MPCE of all household types are on increasing trend. In case of rural areas, self employed in agriculture registered a highest growth in MPCE of 26.1 per cent from 50th round to

66th round while other labour type of households registered a lowest growth of 15.5 per cent. During same period in urban areas, other category of households registered a highest growth in MPCE of 17 per cent while casual labour type households registered a lowest growth of 10.4 per cent.

5.5 Sex-wise distribution

The sex wise distribution of household members in 50th, 55th, 61st and 66th round in rural and urban areas separately is given in Table 19. There was a marginal variation in the male female composition in all the rounds.

Table 19: Sex-wise distribution (Per cent)

Sector	50 th Round		55 th Round		61 th Round		66 th Round	
	Male	Female	Male	Female	Male	Female	Male	Female
Rural	51.51	48.49	51.60	48.40	51.19	48.81	51.44	48.56
Urban	52.36	47.64	52.25	47.75	51.59	48.41	51.58	48.42

(Source: Author's calculation based on NSSO data)

5.6 Marital status

The distribution of household members according to their marital status is placed in Table 20. Over the rounds the currently married population has increased from 44 per cent to 48 per cent while the never married population has declined from 51 per cent to 47 per cent. The proportion of widows divorced and separated are relatively stable.

Table 20: Marital status (Per cent)

Marital Status	50 th Round	55 th Round	61 th Round	66 th Round
Never married	50.15	50.28	49.53	47.60
Currently married	44.64	44.71	45.34	47.45
Widowed	4.87	4.64	4.75	4.64
Divorced/Separated	0.34	0.37	0.38	0.31
Total	100	100	100	100

(Source: Author's calculation based on NSSO data)

5.7 Dwelling Unit

The percentage share of dwelling units in terms of owned, hired, no dwelling unit and others in 61st and 66th round is given in Table 21. It is interesting to see that the share of owned dwelling units is very high in rural areas than urban areas. Higher share of hired dwelling in urban areas may be attributable to increasing urbanization. NSSO data is not available for 50th and 55th rounds.

Table 21: Dwelling Unit (Per cent)

Dwelling	50 th Round		55 th Round		61 th Round		66 th Round	
	R	U	R	U	R	U	R	U
Owned	--	--	--	--	93.85	63.83	94.12	67.14
Hired	--	--	--	--	3.34	28.98	3.62	27.23
No dwelling unit	--	--	--	--	0.03	0.09	0.13	0.27
Others	--	--	--	--	2.78	7.10	2.13	5.36
Total	--	----	----	----	100	100	100	100

(Source: Author's calculation based on NSSO data)

5.8 General Education

The distribution of different households according to their educational qualifications in 50th, 55th, 61st and 66th rounds is illustrated in Table 22. The level of education in the population has increased over the year. The illiteracy rate has declined dramatically from 42.99 per cent (in 50th round) to 27.34 per cent (in 66th round). The level of higher education has increased significantly. The proportion of population having graduate and above qualification has increased from around 4 per cent to around 7 per cent from 50th to 66th round.

Table 22: General education (Per cent)

General Education	50th Round	55th Round	61st Round	66th Round
Not literate	42.99	38.62	33.96	27.34
Literate through attending NFEC/AEC	0.24	0.12	0.80	0.30
TLC	0.19	0.13	--	0.06
Others	0.97	0.88	--	0.27
Literate but below primary	16.57	17.13	14.74	15.97
Primary	12.66	12.31	15.14	13.83
Middle	11.27	12.59	15.52	15.30
Secondary	7.29	8.62	9.03	11.49
Higher Secondary	3.90	4.67	5.33	7.73
Deploma	--	--	0.68	0.80
Graduate and above in:	--	--	3.72	5.32
Agriculture	0.11	0.27	--	--
Engineering/technology	0.22	0.26	--	--
Medicine	0.13	0.15	--	--
Other subjects	3.46	4.25	--	--
Post Graduates & Above	--	--	1.08	1.59
Total	100	100	100	100

(Source: Author's calculation based on NSSO data)

5.9 Religion

Religion wise distribution of households is given in Table 23. NSSO categorises religion into the following 8 groups, viz., Hinduism, Islam, Christianity, Sikhism, Jainism, Buddhism, Zoroastrianism and others. While there was a marginal decline in the proportion of Hindus this has been due to a rise in Muslims and Christian population.

Table 23: Religion (Per cent)

Religion	50th Round	55th Round	61th Round	66th Round
Hinduism	79.28	77.80	76.42	76.17
Islam	10.50	12.15	11.87	12.34
Christianity	5.65	5.42	6.88	6.91
Sikhism	2.23	2.41	2.40	2.19
Jainism	0.38	0.41	0.32	0.30
Buddhism	0.85	0.98	1.06	1.09
Zoroastrianism	0.03	0.02	0.02	0.02
Others	1.06	0.81	1.03	0.98
Total	100	100	100	100

(Source: Author's calculation based on NSSO data)

Table 24: MPCE at constant prices (in Rs.) by Religion

Religion	50 th Round		55 th Round		61 th Round		66 th Round	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Hinduism	183.59	340.85	207.75	377.86	209.15	335.02	230.33	389.70
Islam	172.99	254.03	207.01	304.43	211.31	257.70	219.60	297.90
Christianity	229.16	404.53	273.43	477.49	280.33	399.42	340.92	417.42
Sikhism	294.16	479.21	323.25	477.49	313.87	470.42	377.09	481.08
Jainism	250.03	502.76	301.85	504.06	370.26	521.59	325.40	554.09
Buddhism	168.69	284.32	209.23	337.64	238.34	311.90	256.31	370.52
Zoroastrianism	235.01	957.99	248.34	760.52	134.13	936.83	108.51	995.82
Others	214.78	319.58	263.84	366.05	247.34	311.73	324.39	358.46

(Source: Author's calculation based on NSSO data)

Table 25: Difference in MPCE at constant prices (in Rs.), by Religion between 66th and 50th round.

Religion	Difference in MPCE between 66 th and 50 th round	
	Rural	Urban
Hinduism	46.74	48.85
Islam	46.61	43.87
Christianity	111.76	12.89
Sikhism	82.93	1.87
Jainism	75.37	51.33
Buddhism	87.62	86.2
Zoroastrianism	-126.5	37.83
Others	109.61	38.88

(Source: Author's calculation based on NSSO data)

Religion-wise MPCE at constant prices for the four rounds under discussion is given in Table 24. Difference in MPCE by religion between 66th and 50th round is given in Table 25. It is evident that across religions MPCE between 50th and 66th rounds in urban areas is more than rural areas. Difference in MPCE among Hinduism and Islam is relatively low in both rural and urban areas. However, among Christianity and Sikhism, difference in MPCE is significantly high in rural area than urban areas.

5.10 Social Group

The distribution of households according to different social groups viz. Scheduled Tribes (STs), Scheduled Castes (SCs), Other Backward Casts (OBCs) and Others

(General) is given in table 26. It is important to note that in 50th round OBC population is covered under ‘Others’ category. The proportion of ST population has increased from 11.73 per cent to 13.04 per cent from 50th round to 66th round. The proportion of SC population has also increased marginally. The proportion of OBC population has increased much from 31.91 per cent in 55th round to 37.56 per cent in 66th round. However, under ‘Others’ category, the population has declined from 41.25 per cent in 55th round to 33.15 per cent in 66th round.

Table 26: Social Group (Per cent)

Social Group	50th Round	55th Round	61th Round	66th Round
ST	11.73	11.26	13.17	13.04
SC	15.86	15.58	16.10	16.25
OBC	--	31.91	37.11	37.56
Others	72.41	41.25	33.62	33.15
Total	100	100	100	100

(Source: Author’s calculation based on NSSO data)

Table 27: MPCE of Social Groups at constant prices (Rs).

Social Group	50th Round		55th Round		61st Round		66th Round	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
ST	169.02	316.75	191.51	366.79	200.66	323.91	217.81	351.05
SC	151.55	230.40	175.28	265.68	176.59	238.11	196.34	281.26
OBC	--	--	204.06	321.77	210.95	275.12	233.92	324.29
Others	202.84	230.40	256.83	431.00	263.35	412.97	298.70	468.87

(Source: Author’s calculation based on NSSO data)

Evidently among the social groups, the category “Others” has the highest MPCE in all the rounds and in both rural and urban sectors (See Table 27). The SCs on the other hand are the worst off in the four rounds in both rural and urban sectors. ST groups are reported to doing better than SCs and OBCs. Data is available from the 55th round and they have MPCE which is higher than STs, but lower than the “Others”.

5.11 Distribution of households according MPCE class

Table 28: Distribution of Households according to MPCE (per cent)

MPCE (in Rs.)	50 th Round		55 th Round		61 st Round		66 th Round	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
0-999.99	98.14	87.78	90.9	63.62	85.76	60.69	55.46	30.27
1000-4999.99	1.82	12.04	9.03	35.98	13.96	38.31	43.69	65.96
5000-Above	0.03	0.18	0.07	0.40	0.26	1.00	0.85	3.78

(Source: Author's calculation based on NSSO data)

The numbers of Households in the different rounds are: 50th (total sample households 115354, rural = 69206 and urban = 46148), 55th (total sample households 120309, rural = 71385 and urban = 48924), 61st (total sample households 124644, rural = 79298 and urban = 45346) and 66th (total sample households 100855, rural = 59119 and urban = 41736) rounds are given in Table 28. The monthly per capita range is in constant prices of respective rounds. According to expenditure class shown in Table 28 that there has been significant increase in the MPCE of the households from 50th round to 66th round. It is significant to note that the proportion of household in the MPCE range of Rs.1000-4999.99 has increased from 1.82 per cent in the 50th round to 65.96 per cent in the 66th round. Since these values are in constant prices, it shows a significant rise in real consumption over the four rounds under study.

5.12 Monthly per capita Consumption Expenditure (MPCE) on Different

Commodities and Services

The consumer expenditure surveys collects information on quantity and value of household consumption with a reference period of 'last 7 days' and/or 'last 30 days' for most items of consumption (including all food items) and 'last 365 days' for some less frequently purchased items. As per NSSO definition Households are a group of persons living together and eating food from common kitchen excluding

temporary guests. Expenditure incurred by a household on domestic consumption during a particular period of time is termed as Household consumption expenditure. The survey covers a large number of items so as to ensure exhaustive basket of household consumption items.

The MPCE at constant prices (1987-88 prices) in rural and urban areas is given in Tables 29 and 30 respectively. The proportion of expenditure on different items in the 50th round and 66th round in rural and urban areas is given in Table 31. The growth in MPCE at constant prices from 50th round to 66th round in rural and urban areas is given in Table 32. In order to compare real MPCE of different rounds (after accounting for inflation), the household MPCE at current prices has been converted into constant prices (43rd round i.e.1987-88 prices) using the deflators published in various publication of the Planning Commission (NSSO 2006). In case of rural areas, the Planning Commission has derived deflators from Consumer Price Index (CPI) for agricultural labourers with base 1986-87=100. In urban areas, the deflators have been derived from CPI for urban non-manual employees with base 1984-85=100.

It may be seen from Table 29 and 30 that the total MPCE on food items was higher in urban areas than rural areas both in 50th and 66th round. In case of non food total, the MPCE in rural areas was lower than urban areas during both years. It may also be noted that the total MPCE, taking both food and non-food items together, was lower in rural areas than urban areas during both years under consideration. In case of food items the MPCE in real terms has increased from Rs. 113.66 in 50th round to Rs. 121.86 in rural areas during the 66th round registering a growth of 7.21 per cent, while in urban areas it has marginally decreased from Rs.137.69 to Rs. 135.86 registering a decline of 1.33 per cent. The proportion of expenditure on food in the

total MPCE has declined from 73.17 per cent and 53.25 per cent to 27.89 per cent and 22.19 per cent in rural and urban areas respectively.

In case of non-food items, the MPCE in real terms has increased significantly from Rs. 41.69 in 50th round to Rs. 315.1 in 66th round in rural areas registering a high growth of 655.82 per cent, while it has increased from Rs. 120.87 to Rs. 476.42 in urban areas registering a growth of 294.16 per cent. During the same periods, the proportion of expenditure on non-food items in the total MPCE has increased significantly from 37.83 per cent and 46.75 per cent to 72.11 per cent and 77.81 per cent in rural and urban areas respectively.

The total MPCE at constant prices from 50th round to 66th round has increased from Rs.155.34 to Rs. 436.96 registering a growth of 139 per cent in rural areas, while in urban areas it has increased from Rs.1292.80 to Rs. 3061.43 registering a growth of 137 per cent. The detailed trend in MPCE in major items of consumption at constant prices is given below.

5.13 Major Food items

- 1. Cereals:** Cereals are a staple food item in India. It is evident from the Tables 29 and 30 that real consumption of cereals has declined from 50th round to 66th round both in rural and urban areas. In rural areas it has declined from Rs.42.02 to Rs. 31.66 registering a decline of 24.65 per cent. In urban areas it has declined from Rs. 35.3 to Rs. 30.38 registering a decline of 13.94 per cent. However, it is important to note from Table 17 that the proportion expenditure on cereals has declined drastically from 27.05 per cent in 50th round to 7.25 per cent in 66th round in rural areas. Similarly, in urban areas it has declined from 14 per cent to 5 per cent.

- 2. Pulses and pulse products:** The value of consumption of pulses has increased from Rs. 6.49 in 50th round to Rs. 7.57 in 66th round registering a growth of 16.64 per cent in rural areas. In urban areas, it has increased from Rs. 7.24 to Rs. 8.35 registering a growth of 15.30 per cent during the same period. In spite of this increase, the proportion of expenditure in the total MPCE has declined from 4.18 per cent to 1.73 per cent. Similarly, in urban areas it has declined from 2.80 per cent to 1.36 per cent.
- 3. Milk and milk products:** Milk and milk products are considered as luxury for the greater part of rural population in India. This category includes ghee, butter, curd, preparation of sweets, baby foods, etc. The MPCE on this item in rural areas has increased from Rs. 17.77 in 50th round to Rs. 21.62 registering growth of 22 per cent and in urban areas it has increased marginally from Rs. 24.35 to Rs. 24.61 registering a growth of just 1 per cent. In this item too, the proportion of expenditure in the total MPCE has declined from 11 per cent to 5 per cent. Similarly, in urban areas it has declined from 9 per cent to 4 per cent.
- 4. Edible oil:** The value of consumption of edible oil has declined marginally in real terms from Rs. 7.7 in 50th round Rs.7.09 in 66th round registering a decline of 7.92 per cent in rural areas. In urban areas too, it has declined from Rs. 10.69 to Rs.7.87 registering a decline of 26 per cent. The proportion of expenditure in the total MPCE has declined from 5 per cent to 2 per cent. Similarly, in urban areas it has declined from 4 per cent to 1 per cent.
- 5. Egg, fish and meat:** The MPCE on this item has increased in real terms from Rs.7.55 in 50th round to Rs. 13.48 in 66th round registering a growth of 79 per cent in rural areas, while it has increased from Rs. 10.27 to Rs.15.86

registering a growth of 54 per cent in urban areas. However, the proportion of expenditure in the total MPCE has declined from 5 per cent to 3 per cent. Similarly, in urban areas it has declined from 4 per cent to 3 per cent.

- 6. Vegetables:** The value of consumption of vegetables in real terms has increased from Rs. 10.83 in 50th round Rs. 12.31 in 66th round in rural areas registering a growth of 14 per cent while it has decreased marginally from Rs. 13.75 to Rs.13.65 in urban areas registering a decline of 1.38 per cent. The proportion of expenditure on this item in the total MPCE has declined from 7 per cent to 3 per cent in rural areas, while it has declined from 5 per cent to 2 per cent in urban areas.
- 7. Fruits (fresh):** The MPCE on fresh fruits in real terms has increased from Rs. 2.86 in 50th round to Rs. 3.77 in 66th round in rural areas registering a growth of 32 per cent while in urban areas it has declined from Rs. 5.86 to Rs. 5.45 registering a decline of 7 per cent. The proportion of expenditure on this item in the total MPCE has also declined from 2 per cent to 1 per cent in rural areas and 2 per cent to 1 per cent in urban areas.
- 8. Fruits (dry):** The MPCE on dry fruits has increased from Rs.0.52 in 50th round to Rs. 2.31 in 66th round in rural areas registering a growth of 344 per cent. In urban areas, it has increased from Rs. 1.15 to Rs. 3.02 registering a growth of 163 per cent during the same period. The proportion of expenditure in the total MPCE has increased marginally from 0.33 per cent to 0.53 per cent and in urban areas it has increased only from 0.45 per cent to 0.49 per cent.
- 9. Sugar:** The value of consumption of sugar in real terms has declined from Rs. 5.33 in 50th round to Rs. 4.74 in 66th round in rural areas registering a

growth of -11.07. In urban areas too, it has declined from Rs. 5.89 to Rs. 4.73 registering a decline of 20 per cent. The proportion of expenditure in the total MPCE has declined from 3.43 per cent to 1.08 per cent. Similarly, in urban areas it has declined from 2.28 per cent to 0.77 per cent.

10. Spices: The value of consumption of spices in real terms has increased marginally from Rs. 4 in 50th round to Rs. 4.09 in 66th round in rural areas registering a growth of 2 per cent. In urban areas, it has declined marginally from Rs. 4.57 to Rs.4.33 registering a decline of 5 per cent. The proportion of expenditure in the total MPCE has declined from 3 per cent to 1 per cent. Similarly, in urban areas it has declined from 2 per cent to 1 per cent.

11. Beverages, etc: The value of consumption of beverages etc in real terms has increased from Rs. 7.65 in 50th round to Rs. 11.05 in 66th round in rural areas registering a growth of 44 per cent. However, in urban areas, it has declined from Rs. 17.64 to Rs. 15.79 registering a decline of 10 per cent. The proportion of expenditure in the total MPCE has declined from 5 per cent to 3 per cent. Similarly, in urban areas it has declined from 7 per cent to 3 per cent.

In rural areas consumption expenditure at constant prices in respect of cereals, edible oil and sugar has declined while it has increased in case of pulses and pulse products, milk and milk products, egg fish and meat, vegetables, fruits fresh and dry, spices and beverages from 50th round to 66th round. In urban areas consumption expenditure has declined in respect of cereals, edible oil, vegetables, fruits fresh, sugar, spices and beverages while it has increased in case of pulses and pulse products, milk and milk products, egg fish and meat and fruits dry. However, it is important to note that both in rural and urban areas the

proportion of consumption expenditure in the total expenditure has declined in all the food items except Fruits (Dry) in both rural and urban areas.

We now discuss the expenditure trends in major non-food items.

5.14 Major Non-food items

- 1. Pan:** The MPCE on this item has increased in real terms from Rs. 1.18 in 50th round to Rs. 3.16 in 66th round registering a growth of 168 per cent in rural areas, while it has increased from Rs. 1.45 to Rs. 4.02 registering a growth of 177 per cent in urban areas.
- 2. Tobacco:** The MPCE on this item has increased in real terms from Rs. 3.24 in 50th round to Rs. 4.01 in 66th round registering a growth of 24 per cent in rural areas, while it has increased from Rs. 3.47 to Rs. 5.33 registering a growth of 54 per cent in urban areas. However, the proportion of expenditure in the total MPCE has declined from 2 per cent to 1 per cent. Similarly, in urban areas it has declined from 1 per cent to 0.9 per cent.
- 3. Intoxicants:** The value of consumption of intoxicants in real terms has increased from Rs. 1.65 in 50th round to Rs. 8.91 in 66th round in rural areas registering a growth of 440 per cent. However, in urban areas, it has increased from Rs. 1.55 to Rs. 12.29 registering a growth of 693 per cent. The proportion of expenditure in the total MPCE has increased from 1 per cent to 2 per cent. Similarly, in urban areas it has increased from 0.6 per cent to 2 per cent.
- 4. Fuel & light:** The value of consumption of fuel & light in real terms has increased from Rs. 12.91 in 50th round to Rs. 18.95 in 66th round in rural areas registering a growth of 47 per cent. In urban areas, it has increased from

Rs. 16.82 to Rs. 22.82 registering a growth of 36 per cent. The proportion of expenditure in the total MPCE has declined from 7 per cent to 4 per cent in rural areas. Similarly, in urban areas it has declined from 7 per cent to 4 per cent.

5. Clothing: The MPCE on this item in real terms has increased rapidly from Rs. 0.83 in 50th round to Rs. 21.3 in 66th round in rural areas registering a growth of 2466 per cent and in urban areas it has increased from Rs. 12.67 to Rs. 28.43 registering a growth of 124 per cent. The proportion of expenditure on this item in the total MPCE has also declined from 5 per cent to 4.9 per cent in rural areas. Similarly it has shrink from 4.9 per cent to 4.6 per cent in urban areas.

6. Footwear: : The value of consumption of footwear in real terms has increased from Rs. 0.16 in 50th round to Rs. 8.3 in 66th round in rural areas registering a growth of 5088 per cent. In urban areas, it has increased from Rs. 2.84 in the 50th round to Rs. 10.78 registering a growth of 280 per cent. The proportion of expenditure in the total MPCE has increased from 1 per cent to 1.9 per cent in rural areas. Similarly, in urban areas it has increased from 1.1 per cent to 1.8 per cent.

7. Taxes & Cesses: The value of expenditure of taxes & cesses in real terms has increased from Rs. 0.21 in 50th round to Rs. 1.38 in 66th round in rural areas registering a high growth of 557 per cent. In urban areas, it has increased from Rs. 1.57 to Rs. 3.62 registering a growth of 131 per cent. The proportion of expenditure in the total MPCE has increased marginally from 0.1 per cent to 0.3 per cent in rural areas. Similarly, in urban areas it has marginally declined from 0.61 per cent to 0.59 per cent.

- 8. Education:** The MPCE on this item in real terms has increased from Rs. 1.01 in 50th round to Rs. 14.66 in 66th round in rural areas registering a growth of 1351 per cent while in urban areas it has increased from Rs. 21.72 to Rs. 25.29 registering a growth of 16 per cent. The proportion of expenditure on this item in the total MPCE has declined from 7 per cent to 3 per cent in rural areas and it has declined from 8.40 per cent to 4.13 per cent in urban areas.
- 9. Medical non-institutional:** The MPCE on this item declined from Rs. 14.65 in the 55th round to Rs. 12.23 in the 66th in rural areas and from Rs. 17.44 to Rs. 15.35 in urban areas. The proportion of expenditure in the total MPCE was 2.80 per cent and 2.51 per cent in rural and urban areas respectively during the 66th round.
- 10. Medical institutional:** The MPCE on this item declined from Rs. 176.41 in the 61st round to Rs. 139.43 in the 66th in rural areas and from Rs. 220.65 to Rs. 127.48 in urban areas. The proportion of expenditure in the total MPCE was 32 per cent and 21 per cent in rural and urban areas respectively during the 66th round.
- 11. Entertainment:** The MPCE on this item increased from Rs. 5.03 in the 55th round to Rs. 5.47 in the 66th in rural areas and declined from Rs. 8.05 to Rs. 7.51 in urban areas. The proportion of expenditure in the total MPCE was 1.25 per cent and 1.23 per cent in rural and urban areas respectively during the 66th round.
- 12. Toilet articles:** The MPCE on this item increased from Rs. 4.92 in the 55th round to Rs. 5.18 in the 66th in rural areas and declined from Rs. 9.62 to Rs. 6.96 in urban areas. The proportion of expenditure in the total MPCE was

1.19 per cent and 1.14 per cent in rural and urban areas respectively during the 66th round.

13. Consumer services excluding conveyance: The MPCE on this item increased from Rs. 7.11 in the 55th round to Rs. 11.7 in the 66th in rural areas and from Rs. 14.57 to Rs. 19.76 in urban areas. The proportion of expenditure in the total MPCE was about 3 per cent in rural and urban areas during the 66th round.

14. Conveyance: The MPCE on this item increased from Rs. 10.10 in the 55th round to Rs. 13.16 in the 66th round in rural areas and declined from Rs. 20.99 to Rs. 20.4 in urban areas. The proportion of expenditure in the total MPCE was about 3 per cent in both rural and urban areas during the 66th round.

15. Durable goods: The value of consumption of durable items in real terms has increased from Rs. 0.47 in 50th round to Rs. 15.83 in 66th round in rural areas registering a rapid growth. In urban areas, it has increased from Rs. 10.09 to Rs. 21.95 registering a growth of 118 per cent. The proportion of expenditure in the total MPCE has increased marginally from 3.12 per cent to 3.62 per cent in rural areas. However in urban areas it has decreased marginally from 3.90 per cent to 3.58 per cent.

Table 29: MPCE (Rural) in Rs. at constant prices

(Important) Item	50th R	55th R	61st R	66th R
Cereals	42.02	44.77	34.94	31.66
cereal substitutes	0.2	2.23	1.83	1.74
pulses & their products	6.49	7.90	6.10	7.57
milk & milk products	17.77	25.65	22.32	21.62
edible oil	7.7	7.49	8.71	7.09
egg, fish & meat	7.55	13.35	13.78	13.48
Vegetables	10.83	12.92	12.96	12.31
fruits (fresh)	2.86	4.76	4.17	3.77
fruits (dry)	0.52	3.13	2.54	2.31
Sugar	5.33	4.98	4.64	4.74
Salt	0.34	0.47	0.42	0.45
Spices	4	5.22	3.39	4.09
beverages etc	7.65	9.49	9.41	11.05
food total	113.66	142.37	125.21	121.86
Pan	1.18	4.42	3.42	3.16
Tobacco	3.24	4.81	4.32	4.01
Intoxicants	1.65	11.19	10.27	8.91
fuel & light	12.91	15.27	20.11	18.95
Clothing	0.83	--	24.74	21.3
bedding, etc.	--	0.19	14.90	11.54
Footwear	0.16	--	8.71	8.3
Rent	0.54	11.45	14.22	11.62
taxes & cesses	0.21	1.10	1.40	1.38
Education	1.01	--	14.19	14.66
medical non-institutional	--	14.65	14.08	12.23
medical institutional	--	--	176.41	139.43
Entertainment	--	5.03	5.40	5.47
personal effects	--	4.10	3.80	--
toilet articles	--	4.92	5.32	5.18
sundry articles	--	4.21	4.59	--
consumer services excl.				
Conveyance	--	7.11	8.95	11.7
Conveyance	--	10.10	12.09	13.16
durable goods	0.47	--	36.55	15.83
total non-food	41.69	112.13	383.48	315.1
total expenditure	155.34	254.50	508.69	436.96
Price deflator (43rd round =100)	176	271	319	494

(Source: Author's calculation based on NSSO data)

Table 30: MPCE (Urban) in Rs. at Constant prices

(Important) Item	50th R	55th R	61st R	66th R
Cereals	35.3	39.21	30.62	30.38
cereal substitutes	0.16	1.78	1.42	1.47
pulses & their products	7.24	8.97	6.28	8.35
milk & milk products	24.35	30.08	22.91	24.61
edible oil	10.69	9.69	9.55	7.87
egg, fish & meat	10.27	18.28	14.79	15.86
Vegetables	13.75	16.46	13.92	13.56
fruits (fresh)	5.86	7.26	5.48	5.45
fruits (dry)	1.15	4.62	3.04	3.02
Sugar	5.89	5.18	4.26	4.73
Salt	0.36	0.52	0.42	0.44
Spices	4.57	6.17	3.48	4.33
beverages etc	17.64	19.08	15.43	15.79
food total	137.69	167.31	131.60	135.86
Pan	1.45	6.04	4.19	4.02
Tobacco	3.47	7.34	5.67	5.33
Intoxicants	1.55	17.48	13.37	12.29
fuel & light	16.82	22.76	25.81	22.82
Clothing	12.67	17.26	30.97	28.43
bedding, etc.	--	2.79	15.63	12.41
Footwear	2.84	3.97	11.39	10.78
taxes & cesses	1.57	4.13	3.94	3.62
Education	21.72	18.53	22.47	25.29
medical non-institutional	--	17.44	15.91	15.35
medical institutional	--	20.76	220.65	127.48
Entertainment	--	8.05	9.11	7.51
personal effects	--	4.97	4.29	--
toilet articles	--	9.62	6.93	6.96
sundry articles	--	6.23	5.78	--
consumer services excl. conveyance	--	14.57	17.61	19.76
Conveyance	--	20.99	19.55	20.4
durable goods	10.09	--	40.83	21.95
total non-food	120.87	320.08	587.23	476.42
total expenditure	258.56	487.39	718.83	612.29
Price deflator (43rd round =100)	173	271	338	503

(Source: Author's calculation based on NSSO data)

Table 31: Proportion of expenditure to the total MPCE (Per cent)

(Important) Item	Rural		Urban	
	50th R	66 th R	50th	66 th
Cereals	27.05	7.25	13.65	4.96
cereal substitutes	0.13	0.40	0.06	0.24
pulses & their products	4.18	1.73	2.80	1.36
milk & milk products	11.44	4.95	9.42	4.02
edible oil	4.96	1.62	4.14	1.29
egg, fish & meat	4.86	3.09	3.97	2.59
Vegetables	6.97	2.82	5.32	2.21
fruits (fresh)	1.84	0.86	2.27	0.89
fruits (dry)	0.33	0.53	0.45	0.49
Sugar	3.43	1.08	2.28	0.77
Salt	0.22	0.10	0.14	0.07
Spices	2.57	0.94	1.77	0.71
beverages etc	4.92	2.53	6.82	2.58
food total	63.17	27.89	53.25	22.19
Pan	0.76	0.72	0.56	0.66
Tobacco	2.09	0.92	1.34	0.87
Intoxicants	0.90	2.04	0.60	2.01
fuel & light	7.06	4.34	6.50	3.73
Clothing	5.49	4.87	4.90	4.64
bedding, etc.	0.00	2.64	0.00	2.03
Footwear	1.04	1.90	1.10	1.76
misc. consumer goods	5.01	0.00	5.88	0.00
misc. consumer services	5.66	0.00	8.79	0.00
taxes & cesses	0.11	0.31	0.61	0.59
Education	6.72	3.35	8.40	4.13
medical non-institutional	0.00	2.80	0.00	2.51
medical institutional	0.00	31.91	0.00	20.82
Entertainment	0.00	1.25	0.00	1.23
toilet articles	0.00	1.19	0.00	1.14
Other Household consumables	0.00	1.02	0.00	0.92
consumer services excl. Conveyance	0.00	2.68	0.00	3.23
Conveyance	0.00	3.01	0.00	3.33
durable goods	3.12	3.62	3.90	3.58
total non-food	37.83	72.11	46.75	77.81
total expenditure	100.00	100.00	100.00	100.00

(Source: Author's calculation based on NSSO data)

Table 32: Growth in MPCE from 50th to 66th round at constant prices (Per cent)

(Important) Item	Rural	Urban
Cereals	-24.65	-13.94
cereal substitutes	770.00	818.75
pulses & their products	16.64	15.30
milk & milk products	21.67	1.07
edible oil	-7.92	-26.38
egg, fish & meat	78.54	54.43
Vegetables	13.67	-1.38
fruits (fresh)	31.82	-7.00
fruits (dry)	344.23	162.61
Sugar	-11.07	-19.69
Salt	32.35	22.22
Spices	2.25	-5.25
beverages etc	44.44	-10.49
food total	7.21	-1.33
Pan	167.80	177.24
Tobacco	23.77	53.60
Intoxicants	440.00	692.90
Fuel & light	46.79	35.67
Clothing	2466.27	124.39
Footwear	5087.50	279.58
Taxes & cesses	557.14	130.57
Education	1351.49	16.44
durable goods	3268.09	117.54
total non-food	655.82	294.16
total expenditure	181.29	136.81

(Source: Author's calculation based on NSSO data)

Table 33: Growth in MPCE Rural between rounds at constant prices (Per cent)

(Important) Item	50-55	55-61	61-66	50-66
Cereals	6.54	-21.94	-9.40	-24.65
cereal substitutes	1014.76	-18.03	-4.74	770.00
pulses & their products	21.72	-22.77	24.02	16.64
milk & milk products	44.37	-12.99	-3.12	21.67
edible oil	-2.76	16.20	-18.62	-7.92
egg, fish & meat	76.79	3.22	-2.19	78.54
Vegetables	19.24	0.35	-5.06	13.68
fruits (fresh)	66.56	-12.32	-9.72	31.82
fruits (dry)	498.17	-18.97	-9.12	344.23
Sugar	-6.47	-6.95	2.13	-11.07
Salt	39.26	-11.32	6.50	32.35
Spices	30.63	-35.05	20.60	2.25
Beverages, etc	24.03	-0.86	17.46	44.44

Food total	25.26	-12.05	-2.67	7.21
Pan	274.53	-22.55	-7.70	167.80
Tobacco	48.82	-10.20	-7.30	23.77
Intoxicants	576.48	-8.25	-13.27	440.00
fuel & light	18.28	31.72	-5.79	46.79
Clothing	-100.00	--	-13.93	2466.27
bedding, etc.	--	7662.09	-22.55	--
Footwear	-100.00	--	-4.68	5087.50
taxes & cesses	437.14	26.83	-1.77	557.14
Education	-100.00	--	3.30	1351.49
Entertainment	--	7.34	1.19	--
toilet articles	--	8.14	-2.57	--
consumer services excl.				
Conveyance	--	25.83	30.71	--
Conveyance	--	19.81	8.79	--
durable goods	-100.00	--	-56.69	3268.09
total non-food	168.99	245.37	-17.83	655.82
total expenditure	63.83	99.88	-14.10	181.29

(Source: Author's calculation based on NSSO data)

Table 34: Growth in MPCE Urban in four rounds at constant prices (Per cent)

Item	50-55	55-61	61-66	50-66
Cereals	11.08	-21.89	-0.81	-13.94
cereal substitutes	1026.71	-20.42	3.60	818.75
pulses & their products	23.89	-30.02	32.96	15.30
milk & milk products	23.56	-23.85	7.45	1.07
edible oil	-9.39	-1.40	-17.59	-26.38
egg, fish & meat	78.03	-19.11	7.28	54.43
Vegetables	19.65	-15.40	-2.61	-1.38
fruits (fresh)	23.77	-24.54	-0.53	-7.00
fruits (dry)	301.08	-34.22	-0.62	162.61
Sugar	-12.02	-17.74	11.06	-19.69
Salt	46.00	-20.16	4.70	22.22
Spices	34.99	-43.63	24.63	-5.25
beverages etc	8.17	-19.11	2.28	-10.49
food total	21.51	-21.34	3.24	-1.33
Pan	315.30	-30.59	-4.21	177.24
Tobacco	111.84	-22.77	-6.07	53.60
Intoxicants	1025.14	-23.53	-8.10	692.90
fuel & light	35.35	13.39	-11.56	35.67
Clothing	36.25	79.39	-8.20	124.39
bedding, etc.	--	459.67	-20.63	--
Footwear	39.70	186.87	-5.42	279.58
taxes & cesses	162.78	-4.59	-8.07	130.57
Education	-14.69	21.21	12.56	16.44

medical non-institutional	--	-8.77	-3.52	--
medical institutional	--	962.72	-42.23	--
Entertainment	--	13.26	-17.55	--
toilet articles	--	-27.93	0.39	--
consumer services excl. Conveyance	--	20.86	12.22	--
Conveyance	--	-6.87	4.35	--
durable goods	-100.00	--	-46.24	117.54
total non-food	164.82	83.46	-18.87	294.16
total expenditure	88.50	47.49	-14.82	136.81

(Source: Author's calculation based on NSSO data)

In rural areas consumption expenditure at constant prices in respect of medical non-institutional and medical institutional has declined while it has increased in case of pan, tobacco, intoxicants, fuel & light, clothing, footwear, taxes and cesses, education, entertainment, toilet articles, consumer services excluding conveyance, conveyance and durable goods from 50th round to 66th round. In urban areas consumption expenditure has declined in respect of medical non-institutional, medical institutional entertainment, toilet articles and conveyance while it has increased in case of pan, tobacco, intoxicants, fuel & light, clothing, footwear, taxes & cesses, education, consumer services and conveyance and durable goods. However, it is important to note that both in rural and urban areas the proportion of consumption expenditure in the total expenditure has declined in tobacco, fuel & light, clothing and education while it has increased in footwear and intoxicants both rural and urban areas, taxes & cesses and durable goods increased in rural areas and decreased in urban areas.

5.15 Food - non-food expenditure & Total MPCE

Monthly per capita food, non-food and total expenditure at constant prices for both rural and urban areas in 50th, 61st and 66th round is given in Table 35. Their graphical representation is also give below.

It is evident from the tables that from 50th round to 66th round while there was marginal variation in MPCE in case of foods, the MPCE of non-food has increased significantly. MPCE of urban areas was higher than rural areas.

Table 35 : Food - non-food expenditure & Total MPCE (Constant prices)

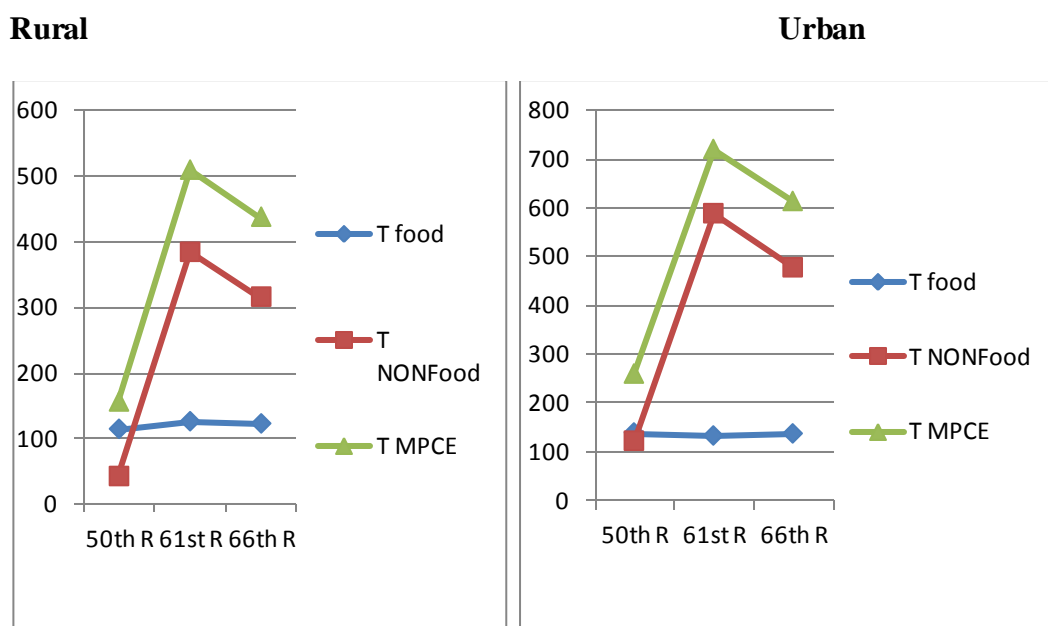
Items	Rural			Urban		
	50th R	61st R	66th R	50th R	61st R	66th R
Total food	113.66	125.21	121.86	137.69	131.6	135.86
Total non-food	41.69	383.48	315.1	120.87	587.23	476.42
Total MPCE	155.34	508.69	436.96	258.56	718.83	612.29

(Source: Author's calculation based on NSSO data)

Here we are not including the 55th round as literature study indicates that it is not comparable with the other rounds as it used 7 days recall period along with 30 days.

Graphical representation of the food and non-food expenditure is shown below:

Figure 2: Food and non-food expenditure (MPCE –Rural & Urban) in Rs.



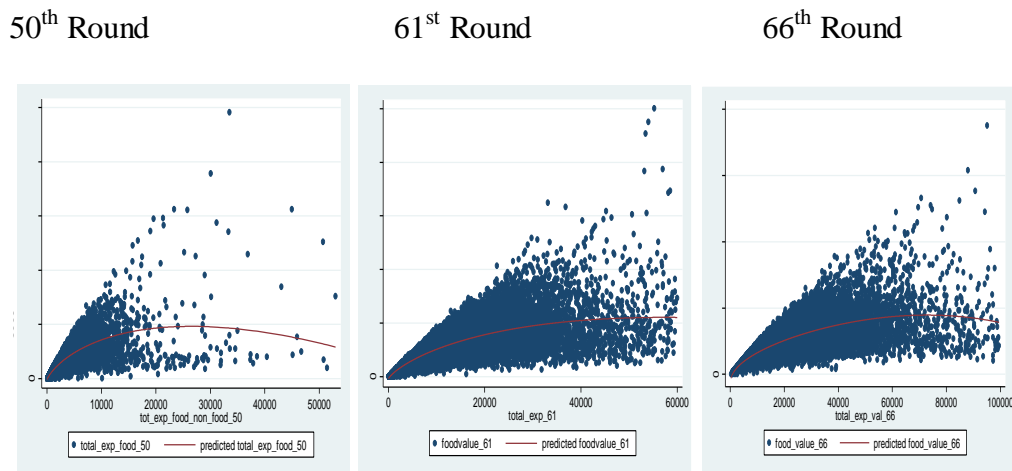
(Source: Author's calculation based on NSSO data)

These figures shows the food and non food MPCE spent by the people in rural and urban areas. Evidently there is a tremendous rise in non food expenditures while food expenditure in both urban and rural areas remained more or less constant from 50th round to 66th round.

5.16 Application of Engel's Law and Kernel density curves in India's consumption patterns

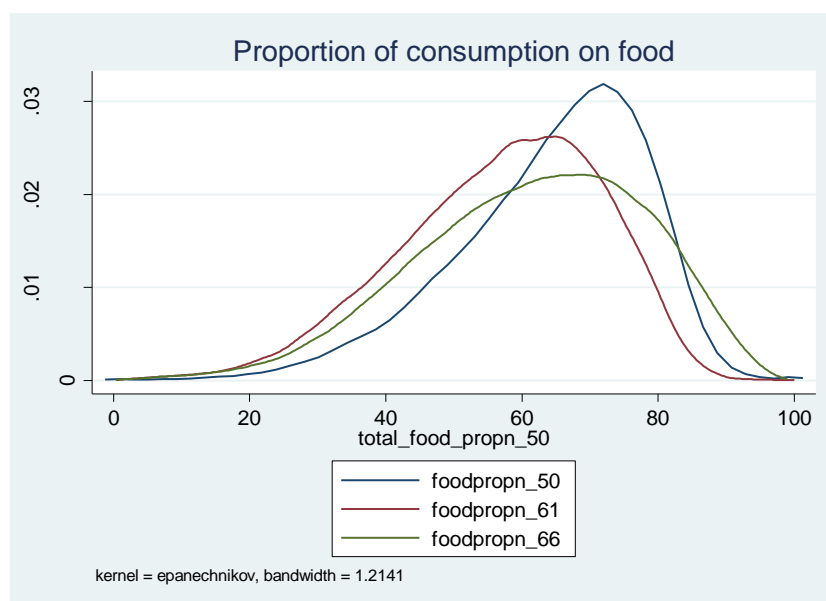
The Engel curve shows the relation between the consumption expenditure on food items to the total expenditure. We exhibit this for India in three quinquennial rounds using unit level data (Figure 3) as scatter plots overlaid with a curve of best fit.

**Figure 3: Relation between total consumption expenditure & food expenditure
–50th, 61st and 66th Rounds.**



The vertical axis measures total consumption expenditure while the horizontal axis indicates food expenditure. The curve showing the relationship between the levels of income and quantity purchased of particular commodities has therefore been called Engel curve. The red line shows the Engel's curve. Our findings validates the Engel's law that food items are necessary goods; the relation will take a concave shape as total expenditure of the people increases it will lead to increase in food consumption expenditure but at a decreasing rate. In the Engel curve, the horizontal axis measures total expenditure and vertical axis measure food expenditure.

Figure 4: Proportion of consumption on food (Kernel density)



We also mapped the cross-section distribution of consumption for the 50th, 61st and 66th rounds. Kernel density estimation (KDE) is a non-parametric way to estimate the probability density function of a random variable. Kernel density analysis reveals that the skewness in distribution of food consumption has decreased over the years. The peakedness has also declined and there is tendency towards normal distribution. (Figure 4). Kernel density estimation is a fundamental data smoothing technique where inferences about the population are made, based on a finite data sample (Crosbie and Corliss 2012).

5.17 MPCE Variation in Rural and Urban

5.17.1 Summary analysis of MPCE (Rural): 50th Round

The Table 36 below gives the summary analysis of monthly per capita expenditure in rural areas.

Table 36: MPCE (last 30 days)

	Percentiles	Smallest		
1%	96.38	1		
5%	130.13	4.66		
10%	151.73	5.47	Obs	69206
25%	197.78	6.2	Sum of Wgt.	69206
50%	268.955		Mean	331.0664
		Largest	Std. Dev.	338.0444
75%	380.65	20319.11		
90%	546.57	25258.23	Skewness	30.53757
99%	1224.75	2802220357.66	Variance	114274
95%	701.76			
.33	Kurtosis	1841.725		

(Author's calculation based on NSSO Data)

The first quartile of MPCE is Rs.197.78. The 1 per cent percentile value is 96.38 and 99 per cent percentile is 1224. The median of MPCE is Rs.268.96, while the mean is Rs. 331.07. As the mean is more than the median the distribution is positively skewed in rural areas. The third quartile average MPCE is Rs. 380.65. As the kurtosis is more than 3, the distribution is heavy tailed.

5.17.2 Summary analysis of MPCE (Urban) (50th Round)

The Table 37 below gives the summary analysis of monthly per capita expenditure in urban areas.

Table 37: MPCE (last 30 days)

	Percentiles	Smallest		
1%	125.38	4.75		
5%	176.91	4.75		
10%	211.8	4.75	Obs	46148
25%	284.96	4.75	Sum of Wgt.	46148
50%	423.03		Mean	583.7772
		Largest	Std. Dev.	799.1988
75%	673.75	37895.65		
90%	1104.5	60830.87	Variance	638718.7
95%	1478.5	67142.62	Skewness	40.86308
99%	2536.45	68558.97	Kurtosis	3041.66

(Author's calculation based on NSSO Data)

The first quartile average MPCE is Rs. 284.96. The 1 per cent percentile value is 125.38 and 99 per cent percentile is 2536.45. While the median of MPCE is Rs. 423.03, the mean is Rs.583.78 The third quartile average MPCE is Rs. 673.75.

5.17.3 Summary analysis of MPCE (Rural) 55th Round

The Table 38 gives the summary analysis of monthly per capita expenditure in rural areas.

Table 38: MPCE (last 30 days)

	Percentiles	Smallest		
1%	180	11		
5%	239	12		
10%	275	12	Obs	71385
25%	355	21	Sum of Wgt.	71385
50%	481		Mean	581.4882
		Largest	Std. Dev.	440.0725
75%	678	17454		
90%	966	18465	Variance	193663.8
95%	1229	26448	Skewness	12.83846
99%	2060	27294	Kurtosis	514.5692

(Author's calculation based on NSSO Data)

It is clear from Table 38 that the first quartile average MPCE is Rs. 355. The 1 per cent percentile value is 180 and 99 per cent percentile is 2060. The median of MPCE is Rs. 481, while the mean is Rs.581.49. The third quartile average MPCE is Rs. 678.

5.17.4 Summary analysis of MPCE (Urban) 55th Round

The Table 39 gives the summary analysis of MPCE in urban areas.

Table 39: MPCE (last 30 days)

	Percentiles	Smallest		
1%	239	17		
5%	330	18		
10%	392	26	Obs	48924
25%	535	49	Sum of Wgt.	48924
50%	801		Mean	1018.692
		Largest	Std. Dev.	1535.275
75%	1232	84424		
90%	1815	87633	Variance	2357068
95%	2299	151196	Skewness	76.98857
99%	3798	205987	Kurtosis	8801.354

(Author's calculation based on NSSO Data)

The first quartile average MPCE is Rs. 535. The 1 per cent percentile value is 239 and 99 per cent percentile is 3798. The median of MPCE is Rs. 801, while the mean is Rs.1018.69. The third quartile average MPCE is Rs. 1232.

5.17.5 Summary analysis of MPCE (Rural) 61st Round

The Table 40 gives the summary analysis of MPCE in rural areas.

Table 40: MPCE-30 Days (Rs.0.00)

	Percentiles	Smallest		
1%	193.42	0		
5%	262.33	0		
10%	306	3.35	Obs	79298
25%	399	7	Sum of Wgt.	79298
50%	548		Mean	696.4047
		Largest	Std. Dev.	974.3744
75%	781.75	60202.7		
90%	1152.1	81751	Variance	949405.5
95%	1498	88473.33	Skewness	45.05356
99%	2807.75	102267.6	Kurtosis	3512.542

(Author's calculation based on NSSO Data)

The first quartile average MPCE is Rs. 399. The 1 per cent percentile value is 193.42 and 99 per cent percentile is 2807.75. The median of MPCE is Rs. 548, while the mean is Rs.696.4. The third quartile average MPCE is Rs. 781.75.

5.17.6 Summary analysis of MPCE (Urban) 61st Round

The Table 41 gives the summary analysis of MPCE in urban areas.

Table 41: MPCE-30 Days (Rs.0.00)

	Percentiles	Smallest		
1%	238.88	6		
5%	329	10		
10%	388.19	20	Obs	45346
25%	518.75	20	Sum of Wgt.	45346
50%	810.11		Mean	1122.723
		Largest	Std. Dev.	1387.824
75%	1365.17	53546.2		
90%	2092	58072	Variance	1926055
95%	2757.5	58763.88	Skewness	33.43258
99%	5004	144790.3	Kurtosis	2791.835

(Author's calculation based on NSSO Data)

The first quartile average MPCE is Rs. 518.75. The 1 per cent percentile value is 238.88 and 99 per cent percentile is 5004. The median of MPCE is Rs. 810.11, while the mean is Rs.1122.72. The third quartile average MPCE is Rs. 1365.17.

5.17.5 Summary analysis of MPCE (Rural) 66th Round

The Table 42 gives the summary analysis of monthly in rural areas.

Table 42: MPCE (URP)

	Percentiles	Smallest		
1%	323.4	2.5		
5%	444	62		
10%	522.4	74	Obs	59119
25%	684	117	Sum of Wgt.	59119
50%	934		Mean	1195.215
		Largest	Std. Dev.	2644.334
75%	1334.5	124470.3		
90%	1948.33	132960.5	Variance	6992501
95%	2514	322213	Skewness	98.80954
99%	4655	405618.5	Kurtosis	13239.03

(Author's calculation based on NSSO Data)

The first quartile average MPCE is Rs. 684. The 1 per cent percentile value is 323.4 and 99 per cent percentile is 4655. The median of MPCE is Rs. 934, while the mean is Rs.1195.22. The third quartile average MPCE is Rs. 1334.5.

5.17.6 Summary analysis of MPCE (Urban) 66th Round

The table 43 gives the summary analysis of MPCE in urban areas.

Table 43: MPCE (URP)

	Percentiles	Smallest		
1%	378.5	77		
5%	515	88		
10%	624.71	108.25	Obs	41736
25%	900.225	131.67	Sum of Wgt.	41736
50%	1434.6		Mean	1916.605
		Largest	Std. Dev.	2748.789
75%	2302.585	122135.2		
90%	3449.67	132201.5	Variance	7555839
95%	4496.5	184868.3	Skewness	30.75334
99%	8389.5	209332	Kurtosis	1687.931

(Author's calculation based on NSSO data)

The first quartile average MPCE is Rs. 900.23. The 1 per cent percentile value is 378.5 and 99 per cent percentile is 8389.5. The median of MPCE is Rs. 1434, while the mean is Rs.1916.61. The third quartile average MPCE is Rs. 2302.59.

In all the cases discussed above the mean is marginally same.

We next examine if there is significant difference in MPCE between rural and urban areas.

5.18 MPCE Variation in Rural and Urban Sectors in India

MPCE variation in rural and urban sectors in four rounds of NSS is studied using two-sample t test with unequal variances. We test the null hypothesis that there is no difference in MPCE between rural and urban areas. The results of t test are given in Table 44 to 47. In all the rounds the difference in MPCE between rural and urban areas is statistically highly significant at 99 per cent.

Table 44: Two-sample t test with unequal variances - 50th Round

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
R	69206	331.0664	1.284996	338.0444	328.5478	333.585
U	46148	583.7772	3.720304	799.1988	576.4853	591.069
combined	115354	432.1647	1.715311	582.5849	428.8027	435.5267
diff		-252.7108	3.935972		-260.4253	-244.9963
diff = mean(1) - mean(2)				t = -64.2054		
Ho: diff = 0				Satterthwaite's degrees of freedom = 57271.1		
Ha: diff < 0				Ha: diff != 0		
Ha: diff > 0				Ha: diff > 0		
Pr(T < t) = 0.0000		Pr(T > t) = 0.0000		Pr(T > t) = 1.0000		

(Author's calculation based on NSSO data)

Table 45: Two-sample t test with unequal variances - 55th Round

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
R	71385	581.4882	1.647103	440.0725	578.2599	584.7165
U	48924	1018.692	6.941049	1535.275	1005.087	1032.297
combined	120309	759.2784	3.050481	1058.077	753.2995	765.2573
diff		-437.2038	7.1338		-451.1861	-423.2215
diff = mean(1) - mean(2)				t = -61.2862		
Ho: diff = 0				Satterthwaite's degrees of freedom = 54469.5		
Ha: diff < 0				Ha: diff != 0		
Ha: diff > 0				Ha: diff > 0		
Pr(T < t) = 0.0000		Pr(T > t) = 0.0000		Pr(T > t) = 1.0000		

(Author's calculation based on NSSO data)

Table 46: Two-sample t test with unequal variances -61st Round

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
R	79298	696.4047	3.460149	974.3744	689.6228	703.1866
U	45346	1122.723	6.517257	1387.824	1109.949	1135.497
combined	124644	851.5009	3.287083	1160.503	845.0583	857.9436
diff		-426.318	7.378839		-440.7805	-411.8555
diff = mean(1) - mean(2)				t = -57.7758		
Ho: diff = 0				Satterthwaite's degrees of freedom = 71273		
Ha: diff < 0				Ha: diff != 0		
Pr(T < t) = 0.0000				Pr(T > t) = 0.0000		
				Pr(T > t) = 1.0000		

(Author's calculation based on NSSO data)

Table 47: Two-sample t test with unequal variances - 66th Round

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
R	59119	1195.215	10.87559	2644.334	1173.899	1216.532
U	41736	1916.605	13.45507	2748.789	1890.232	1942.977
combined	100855	1493.742	8.537834	2711.418	1477.008	1510.476
diff		-721.3891	17.30079		-755.2985	-687.4797
diff = mean(1) - mean(2)				t = -41.6969		
Ho: diff = 0				Satterthwaite's degrees of freedom = 87666.1		
Ha: diff < 0				Ha: diff != 0		
Pr(T < t) = 0.0000				Pr(T > t) = 0.0000		
				Pr(T > t) = 1.0000		

(Author's calculation based on NSSO data)

In tables 44 to 47 we have compared the MPCE between two groups viz. rural and urban with unequal variance. The results show the difference in mean MPCE between rural and urban areas in all the four rounds i.e. 50th, 55th, 61st and 66th rounds is statistically significant. Though the rural-urban MPCE gap is significant it is evident that the standard error of mean MPCE is increasing thereby the t-value is decreasing from 50th round to 66th rounds.

5.19 MPCE Variation in Social Group and Religion in India

We next examine the variation in MPCE among different social groups and religions. The null hypothesis is monthly per capita consumption expenditure among

different social groups and religion is equal. We use the multivariate test for means of MPCE for both Goa and India in all four rounds.

The results of the country level analysis are presented in Table 48 to 51. The F-statistic is highly significant (P=0.0000) in all the four rounds which indicates that the null hypothesis cannot be accepted. This indicates that the difference in means of MPCE among different religion and social groups is highly significant.

Table 48: Test for equality assuming homogeneity (50th round)

	f	Statistic	F(df1, df2)		=	F	Prob>F
Wilks' lambda		0.9732	31.0	115322.0		102.56	0.0000 e
Pillai's trace		0.0268	31.0	115322.0		102.56	0.0000 e
Lawley-Hotelling trace		0.0276	31.0	115322.0		102.56	0.0000 e
Roy's largest root		0.0276	31.0	115322.0		102.56	0.0000 e

e = exact, a = approximate, u = upper bound on F

(Author's calculation based on NSSO data)

Table 49: Test for equality assuming homogeneity (55th round)

	f	Statistic	F(df1, df2)		=	F	Prob>F
Wilks' lambda		0.9637	37.0	120154.0		122.36	0.0000 e
Pillai's trace		0.0363	37.0	120154.0		122.36	0.0000 e
Lawley-Hotelling trace		0.0377	37.0	120154.0		122.36	0.0000 e
Roy's largest root		0.0377	37.0	120154.0		122.36	0.0000 e

e = exact, a = approximate, u = upper bound on F

(Author's calculation based on NSSO data)

Table 50: Test for equality assuming homogeneity (61st round)

	f	Statistic	F(df1, df2)		=	F	Prob>F
Wilks' lambda		0.9605	29.0	124568.0		176.69	0.0000 e
Pillai's trace		0.0395	29.0	124568.0		176.69	0.0000 e
Lawley-Hotelling trace		0.0411	29.0	124568.0		176.69	0.0000 e
Roy's largest root		0.0411	29.0	124568.0		176.69	0.0000 e

e = exact, a = approximate, u = upper bound on F

(Author's calculation based on NSSO data)

Table 51: Test for equality assuming homogeneity (66th round)

	f	Statistic	F(df1,	df2)	= F	Prob>F
Wilks' lambda		0.9753	35.0	100819.0	72.86	0.0000 e
Pillai's trace		0.0247	35.0	100819.0	72.86	0.0000 e
Lawley-Hotelling trace		0.0253	35.0	100819.0	72.86	0.0000 e
Roy's largest root		0.0253	35.0	100819.0	72.86	0.0000 e

e = exact, a = approximate, u = upper bound on F

(Author's calculation based on NSSO data)

The results at tables 48 to 51 indicate that there is continued existence of variation in MPCE among social groups across religions over the years. It is evident that the test for equality of MPCE means assuming homogeneity was statistically highly significant in 50th, 55th, 61st and 66th rounds.

5.20 Conclusion:

Our findings above are based on the consumption pattern on India using the unit level data released by NSSO in respect of four quinquennial rounds, i.e., 50th (1993-94), 55th (1999-2000), 61st (2004-2005) and 66th (2009-2010) rounds.

We find that the traditional method of using firewood, kerosene and other method of cooking was declining and LPG is gaining in popularity. The MPCE of households where there was no cooking arrangement is more in urban areas than in rural areas in all the rounds. The MPCE of households using electricity as primary source of energy for lighting was highest followed by households using candle, gas and kerosene in urban areas of 55th, 61st and 66th rounds.

Over the years the proportion of agricultural households has declined while the non-agricultural households have increased. In urban areas comparison of 50th round and 66th round reveals that there was only marginal variation in the proportion of

household types of 'Self employed' and decline in the regular wage/salary earners. However, the proportion households in the category of 'casual labour' have increased.

In rural area the MPCE of self employed in non-agriculture sector and others are more than MPCE of agricultural labour, self employed in agriculture and other labour. It has been noted that overall the MPCE at constant prices of different household types are showing an increasing trend. In urban areas the MPCE of regular wage/salary earning households and others are more than the self employed and casual labour. The rural MPCE of various social groups increased considerably compared to the urban areas.

It may be seen that the total MPCE on food items was higher in urban areas than rural areas both in 50th and 66th round. However, in case of non food expenditure, the MPCE in rural areas was lower than urban areas during both years. It may also be noted that the total MPCE, taking both food and non-food items together, was lower in rural areas than urban areas in both years under consideration. At constant prices the consumption of cereals has declined from 50th round to 66th round both in rural and urban areas. Similarly, the proportion of expenditure on other food items like pulses, milk and its products, vegetables, fruits (fresh),etc have declined except the expenditure on dry fruits and spices which has increased marginally. Regarding non-food items the proportion of expenditure on pan, intoxicants, footwear and rent etc, are showing an increasing trend compared to tobacco, clothing, education, etc.

MPCE distribution in all the four rounds, (in rural and urban areas) is positively skewed and heavy tailed. The difference in MPCE in rural and urban sectors in all the four rounds is statistically highly significant.

The variation in MPCE in social groups and across religions in India is tested using multivariate analysis. We find that the difference in means of MPCE among different religion and social groups is statistically significant, implying differences across these groups. There is a substantial rise in non food expenditures while food expenditure in both urban and rural areas remained more or less constant from 50th to 66th round.

The relationship between food expenditure and total expenditure reveals that it has a concave shape. This is in conformity with Engels law that suggests that as total expenditure of the people increases it will lead to increase in food consumption expenditure but at a decreasing rate.

In the next chapter we undertake the comparative analysis of consumption expenditure by comparing India's consumption expenditure patterns with the eight selected states, namely Bihar, Goa, Haryana, Kerala, Maharashtra, Madhya Pradesh, Odisha and Tamil Nadu.

Chapter 6

A Comparative Analysis of Consumption

6.1 Introduction

In the previous chapter we examined the trend in MPCE at the national level. In this chapter we compare the Indian average with 8 selected states viz, Bihar, Goa, Haryana, Kerala, Madhya Pradesh, Maharashtra, Odisha and Tamil Nadu in respect of 50th, 61st and 66th rounds. We have a reason for selecting these states. These 8 states are chosen as the top 3 and bottom 3 per capita income states. The bottoms 3 are part of BIMARU states – Bihar, Madhya Pradesh and Odisha. Goa and Kerala have high income and also high on social development. Among them Maharashtra, Tamil Nadu and Haryana are from high income states.

The sample size for the country and the 8 states under study are given in Table 52 below.

Table 52 : Sample size

Round	All India		Bihar		Goa	
	Rural	Urban	Rural	Urban	Rural	Urban
50 th	69206	46148	6979	2155	146	213
61 st	79298	79298	4354	1398	160	238
66 th	59119	41736	3299	1272	159	285
Round	Kerala		Haryana		Madhya Pradesh	
	Rural	Urban	Rural	Urban	Rural	Urban
50 th	2555	1830	1,040	697	5,313	3,233
61 st	3300	1950	1,680	1,040	3,838	2,075
66 th	2606	1846	1,440	1,180	2,731	1,966
Round	Maharashtra		Orissa		Tamil Nadu	
	Rural	Urban	Rural	Urban	Rural	Urban
50 th	4,440	5,528	3,338	1,037	3,901	4,042
61 st	5,014	4,993	3,836	1,187	4,159	4,137
66 th	4,015	3,980	2,975	1,055	3,320	3,318

(Source: Author's calculation based on NSSO data)

6.2 Major Food & Non-food Items. (Median)

In order to compare consumption patterns we have chosen an average value – the median. Median is found by arranging the values in ascending or descending order and then selecting the middlemost number. If the total number of values in the sample is even, then the median is the mean of the two middle numbers. The median is a useful number in cases where the distribution has extreme values which would otherwise skew the data and distort the mean as a measure of average.

6.3 MPCE classified in lower, medium and upper ranges

MPCE is further analysed in three ranges. Median (M) expenditure is compared with the first quartile i.e. 25th percentile which is called the lower bound (L) and third quartile i.e. 75th percentile, which is called the upper bound (U). The gap between the lower and upper bound is lower in Bihar in comparison with the Goa and Kerala (see Table 53). This suggests a lower inequality in Bihar than Kerala and Goa. It is very interesting to see that the lower bound of rural MPCE of Goa is more than the upper bound of MPCE of Bihar. This implies that poor of Goa may be equal to rich of Bihar in terms of average MPCE. It may also be seen that in rural areas the all-India average of MPCE in the 3rd quartile is marginally higher than the 1st quartile of MPCE of Goa. Thus, the expenditure gap in MPCE between Goa and Bihar is clearly visible. This trend is observed in all the three round of NSSO i.e. 50th round, 61st round and 66th round.

Similar trend is seen both major food and non-food items in the 8 states under consideration (see Table 54 to 71).

6.4 Comparison of MPCE range in 8 states

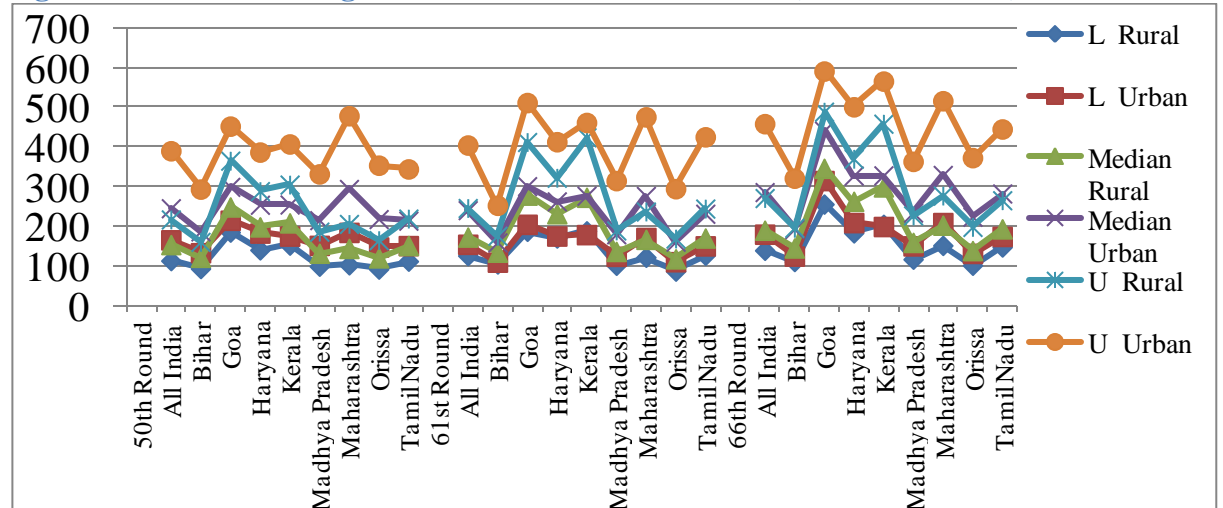
Table 53 : Per capita MPCE in 8 states and all India average (constant prices)

States	L (25%)		Median (50%)		U (75%)	
	Rural	Urban	Rural	Urban	Rural	Urban
50th Round						
All India	112.38	164.72	152.82	244.53	216.28	389.45
Bihar	92.39	132.23	120.65	186.13	159.70	292.77
Goa	184.29	214.10	247.74	298.41	364.49	451.62
Haryana	139.54	181.85	197.48	253.18	287.77	386.13
Kerala	151.46	174.29	207.61	253.88	304.15	406.61
Madhya Pradesh	98.30	150.72	131.06	214.43	185.41	331.09
Maharashtra	101.78	183.49	143.15	293.17	204.93	477.83
Odisha	91.03	146.71	119.30	217.17	164.06	353.01
Tamil Nadu	110.99	150.14	150.64	213.07	218.38	343.60
States	L (25%)		Median (50%)		U (75%)	
	Rural	Urban	Rural	Urban	Rural	Urban
61st Round						
All India	125.08	153.48	171.79	239.68	245.06	403.90
Bihar	104.01	108.52	133.63	158.48	175.08	251.89
Goa	186.32	203.87	277.64	300.21	411.56	511.04
Haryana	169.45	174.36	230.64	261.80	321.38	412.22
Kerala	187.41	177.93	272.15	276.10	423.55	460.80
Madhya Pradesh	100.63	123.15	135.57	178.85	188.40	314.14
Maharashtra	120.90	170.56	166.08	275.60	236.21	474.96
Odisha	85.89	109.57	116.90	160.12	168.00	293.79
Tamil Nadu	125.92	149.50	169.40	230.55	243.65	424.64
States	L (25%)		Median (50%)		U (75%)	
	Rural	Urban	Rural	Urban	Rural	Urban
66th Round						
All India	138.46	178.97	189.07	285.21	270.14	457.77
Bihar	110.09	123.79	144.28	191.91	195.14	320.36
Goa	254.96	314.31	345.24	440.16	488.06	590.51
Haryana	182.35	208.28	261.98	326.94	369.26	500.35
Kerala	203.80	198.38	298.31	327.57	457.69	565.16
Madhya Pradesh	115.94	149.56	158.33	233.45	226.34	362.69
Maharashtra	150.71	208.28	201.82	328.57	276.42	515.61
Odisha	100.71	130.58	137.72	223.06	197.37	372.17
Tamil Nadu	146.74	173.36	192.51	281.74	264.70	444.41

(Source: Author's calculation based on NSSO data)

Graphical representation of Per capita MPCE range of Goa, Kerala, Bihar, Orissa, Madhya Pradesh, Maharashtra & All India (constant prices) is given below:

Figure 5: PC MPCE ranges of selected states & All India (constant Prices)



(Source: Author's calculation based on NSSO data)

In all the three categories, i.e., lower bound (L), median and the upper bound (U) Goa had the highest MPCE in all the 3 rounds closely followed by Kerala. Interestingly, in rural areas the lower bound (L) MPCE of Goa is either higher or close to the upper bound (U) MPCE of Bihar, Odisha, Madhya Pradesh, Maharashtra and the All India in all the 3 rounds. However, similar trend is not observed in urban areas. (L) MPCE of Goa is not higher than (U) MPCE of Maharashtra in any of the rounds and the difference is also not very marginal.

In rural areas the lower bound (L) MPCE in respect of Goa, Kerala and Maharashtra has improved considerably from 50th round to 66th round while in Bihar, Odisha and Madhya Pradesh, there was marginal improvement. Similar is the trend in MPCE median and MPCE upper bound (U) in rural areas and urban sector in food and non-food expenditure items (see Table 54 to 70)

Table 54: MPCE range of Major food Items (All India) at constant prices

Items	L (25%)		Median (50%)		U (75%)	
	Rural	Urban	Rural	Urban	Rural	Urban
50th Round						
Cereals	23.52	20.23	36.36	31.56	53.98	46.36
Pulses & products	2.93	3.70	5.11	6.47	8.41	9.83
Milk & products	0.00	5.78	8.52	15.61	22.16	34.68
Edible Oils	3.64	5.20	6.14	9.02	9.66	14.34
Eggs, fish & meat	0.00	0.00	3.18	4.62	10.23	14.68
Vegetables	5.80	7.28	8.98	11.68	13.64	17.80
Fruits (fresh)	0.00	1.16	1.14	3.35	3.41	7.40
61st Round						
Cereals	21.32	12.31	31.97	18.93	46.14	25.44
Pulses & products	3.13	3.96	5.08	5.86	7.86	7.72
Milk & products	6.27	13.31	13.57	15.98	27.59	22.19
Edible Oils	4.89	5.68	7.52	5.68	11.29	8.64
Eggs, fish & meat	5.02	2.13	10.03	6.51	18.81	16.57
Vegetables	7.71	5.33	11.22	6.51	16.30	11.60
Fruits (fresh)	1.25	1.89	2.51	2.13	5.02	3.96
66th Round						
Cereals	17.81	17.77	27.94	27.12	40.69	39.01
Pulses & products	3.77	4.37	6.28	7.16	9.76	10.85
Milk & products	7.29	9.15	13.36	17.50	25.91	31.81
Edible Oils	4.05	4.45	6.07	6.96	9.07	10.10
Eggs, fish & meat	4.86	5.88	9.31	11.13	17.00	20.44
Vegetables	7.37	7.87	10.61	11.59	15.18	16.86
Fruits (fresh)	1.21	1.59	2.43	3.58	4.57	7.00

(Source: Author's calculation based on NSSO data)

Table 55: MPCE range of Major non-food items (All India) at constant prices

Items	L (25%)		Median (50%)		U (75%)	
	Rural	Urban	Rural	Urban	Rural	Urban
50th Round						
Tobacco	0.00	0.00	1.70	0.00	4.55	4.45
Intoxicants	2.84	5.20	5.68	9.25	11.36	18.50
Fuel & light	7.34	9.43	10.80	14.86	15.74	21.51
Clothing	0.00	0.00	0.00	0.00	3.41	0.00
Footwear	0.00	0.00	0.00	0.00	0.00	0.00
Education	0.00	0.22	0.93	2.15	3.39	6.33
61st Round						
Tobacco	1.25	3.31	2.63	4.44	5.27	5.18
Intoxicants	3.13	4.14	6.27	8.28	12.54	15.15
Fuel & light	11.79	14.91	17.37	22.97	25.40	32.54
Clothing	6.27	7.40	13.48	16.86	28.21	35.50
Footwear	2.82	2.96	5.02	5.92	10.03	13.02

Education	1.88	3.85	5.77	8.88	14.42	23.67
66th Round						
Tobacco	1.21	1.39	2.43	3.10	4.94	6.52
Intoxicants	2.79	3.98	5.10	7.95	10.12	14.91
Fuel & light	11.78	14.04	16.80	20.28	23.26	27.75
Clothing	5.67	7.16	12.15	15.90	24.29	33.80
Footwear	2.43	2.98	4.86	6.36	9.72	13.52
Education	2.02	3.78	5.26	0.72	1.16	25.29

(Source: Author's calculation based on NSSO data)

It may be seen from table 54 that at country level the MPCE at constant prices on cereals and edible oils shows declining trend while pulses & products, milk & products, eggs, fish & meat, vegetables, fruits (fresh) shown increasing trends in all the three MPCE ranges from 50th round to 66th round. Table 55 reveals that all the 6 non-food items show increasing trend in all the MPCE ranges from 50th round to 66th round.

Table 56: MPCE range of Major food items (Goa) at constant prices

Items	L (25%)		Median (25%)		U (75%)	
	Rural	Urban	Rural	Urban	Rural	Urban
50th Round						
Cereals	18.92	18.67	30.17	28.86	41.88	44.97
Pulses & products	2.73	2.66	4.66	4.86	6.99	7.77
Milk & products	0.00	4.05	8.81	15.84	27.27	22.54
Edible Oils	3.31	4.05	6.61	6.42	10.45	9.36
Eggs, fish and meat	11.93	10.75	20.45	21.97	33.75	33.53
Vegetables	5.80	5.95	8.52	8.90	11.82	12.02
Fruits (fresh)	9.77	5.20	17.05	14.45	26.59	22.89
61st Round						
Cereals	24.17	22.78	31.61	34.62	41.41	48.46
Pulses & products	1.61	3.25	2.15	5.03	3.51	7.69
Milk & products	5.02	0.00	14.58	0.00	21.00	0.00
Edible Oils	4.29	0.00	7.21	0.00	10.66	0.00
Eggs, fish and meat	16.30	0.00	24.61	0.00	34.58	0.00
Vegetables	6.56	0.00	9.03	0.00	11.85	0.00
Fruits (fresh)	8.78	0.00	12.23	0.00	19.44	0.00
66th Round						

Cereals	19.19	21.07	29.72	28.75	37.21	39.05
Pulses & products	3.93	6.30	7.67	9.03	12.63	11.97
Milk & products	11.13	14.91	17.41	17.10	31.58	31.01
Edible Oils	4.33	4.77	6.07	6.56	8.74	8.91
Eggs, fish and meat	12.25	14.04	21.50	24.17	38.87	38.17
Vegetables	9.72	8.47	12.51	11.13	15.91	15.63
Fruits (fresh)	9.31	9.46	12.75	14.00	17.81	18.65

(Source: Author's calculation based on NSSO data)

Table 57: MPCE range of Major non-food items (Goa) at constant prices

Items	L (25%)		Median (50%)		U (75%)	
	Rural	Urban	Rural	Urban	Rural	Urban
50th Round						
Tobacco	0.00	0.00	0.00	0.00	5.68	3.99
Intoxicants	6.82	6.01	12.16	16.18	21.59	26.53
Fuel & light	9.76	8.21	14.38	13.70	20.14	19.08
Clothing	0.00	0.00	0.00	0.00	0.00	0.00
Footwear	0.00	0.00	0.00	0.00	0.00	0.00
Education	0.00	0.00	0.25	0.39	1.31	1.45
61st Round						
Tobacco	1.50	0.00	4.45	0.00	7.52	0.00
Intoxicants	5.42	0.00	9.84	0.00	17.24	0.00
Fuel & light	21.06	19.40	25.41	24.79	31.35	30.15
Clothing	12.54	14.79	25.08	26.63	47.96	57.69
Footwear	3.45	7.69	8.15	11.83	15.67	17.75
Education	1.88	3.55	5.52	5.47	10.03	14.59
66th Round						
Tobacco	1.62	1.99	3.64	4.10	5.06	9.54
Intoxicants	3.00	4.37	4.05	6.36	6.07	11.93
Fuel & light	17.61	19.48	21.94	23.94	26.48	28.31
Clothing	10.12	11.93	20.24	28.63	38.87	54.47
Footwear	4.86	4.77	8.10	10.14	14.17	19.88
Education	2.43	3.58	4.45	7.16	7.69	15.51

(Source: Author's calculation based on NSSO data)

In Goa among food items (table 56) it is interesting to see that MPCE of cereals has increased in the lower bound while it has increased in the median and upper bound from 50th to 66th round. Similarly, MPCE on fruits (Fresh) has increased in urban area in the lower bound while it has increased in the median and upper bound.

However, in the remaining food items it shows an increasing trend from 50th to 66th round. However, among non-food items (table 57) MPCE on intoxicants shows declining trend while the remaining non-food items shows increasing trend from 50th round to 66th round.

Table 58: MPCE range of Major food items (Bihar) at constant prices

Items	L (25%)		Median (50%)		U (75%)	
	Rural	Urban	Rural	Urban	Rural	Urban
50th Round						
Cereals	27.67	27.17	43.41	45.43	62.50	62.66
Pulses & products	2.73	3.47	4.55	5.90	7.10	9.25
Milk & products	0.00	0.00	3.41	13.87	20.45	27.75
Edible Oils	3.64	3.93	4.83	7.86	7.73	12.72
Eggs, fish and meat	0.00	0.00	1.14	3.47	5.34	11.56
Vegetables	5.91	7.86	8.86	12.95	13.07	19.02
Fruits (fresh)	0.00	0.00	0.00	1.39	1.36	4.62
61st Round						
Cereals	24.26	22.49	36.55	34.94	51.10	48.79
Pulses & products	3.26	3.65	5.27	5.33	7.96	8.11
Milk & products	7.52	8.88	16.93	15.68	28.21	27.81
Edible Oils	5.64	5.33	7.52	7.40	11.29	11.12
Eggs, fish and meat	3.13	5.92	5.33	10.36	8.78	15.15
Vegetables	7.71	7.81	10.92	10.95	15.55	16.18
Fruits (fresh)	0.88	1.07	1.88	2.07	3.64	4.44
66th Round						
Cereals	23.77	20.95	34.78	32.60	46.36	45.23
Pulses & products	3.72	3.98	5.67	5.96	8.14	8.63
Milk & products	6.88	9.94	12.15	16.90	24.29	27.44
Edible Oils	4.25	4.77	6.32	6.64	8.50	9.15
Eggs, fish and meat	3.08	3.18	4.86	5.96	8.10	10.26
Vegetables	8.06	7.91	11.09	11.41	15.67	16.38
Fruits (fresh)	0.81	1.19	1.74	2.39	3.44	4.93

(Source: Author's calculation based on NSSO data)

Table 59: MPCE range of Major non-food items (Bihar) at constant prices

Items	L (25%)		Median (50%)		U (75%)	
	Rural	Urban	Rural	Urban	Rural	Urban
50th Round						
Tobacco	0.00	0.00	1.36	0.52	2.27	2.02
Intoxicants	1.82	3.18	3.21	5.78	5.45	9.25
Fuel & light	6.48	7.98	8.98	12.20	12.47	18.67
Clothing	0.00	0.00	0.00	0.00	0.00	0.00
Footwear	0.00	0.00	0.00	0.00	0.00	0.00
Education	0.00	0.00	0.15	0.38	0.62	1.42
61st Round						
Tobacco	0.94	0.89	1.57	1.48	2.51	2.37
Intoxicants	1.88	2.37	3.13	3.85	5.02	7.10
Fuel & light	11.47	13.08	15.49	19.41	20.75	28.08
Clothing	5.33	5.33	11.10	11.24	23.39	23.55
Footwear	2.51	2.37	3.76	3.55	6.90	7.10
Education	1.25	2.96	3.13	8.88	9.40	21.15
66th Round						
Tobacco	0.81	0.80	1.05	1.19	1.70	1.99
Intoxicants	1.62	2.39	2.43	3.98	4.86	8.35
Fuel & light	11.34	13.28	14.74	18.45	18.87	22.47
Clothing	5.67	5.96	10.93	12.60	21.05	24.65
Footwear	2.02	2.19	3.24	4.37	5.67	8.55
Education	1.42	3.18	4.05	8.35	8.91	22.35

(Source: Author's calculation based on NSSO data)

It is evident from table 58 that in Bihar while MPCE of cereals has declined, it has increased in the remaining 6 food items in all the three MPCE ranges from 50th to 66th round. Among non-food items it may be seen from table 59 that MPCE on intoxicants shows declining trend while it shows increasing trend in fuel & light, clothing, footwear and education in all the three MPCE ranges from 50th to 66th round.

Table 60: MPCE range of Major food items (Haryana) at constant prices

Items	L (Poorest 25%)		Median		U (Richest 25%)	
	Rural	Urban	Rural	Urban	Rural	Urban
50th Round						
Cereals	27.91	36.37	39.50	50.64	57.55	77.23
Pulses & products	3.35	3.35	5.00	4.97	7.50	7.34
Milk & products	23.86	17.34	51.14	37.23	102.27	69.36
Edible Oils	1.14	4.51	4.20	8.09	7.73	11.68
Eggs, fish and meat	0.00	0.00	0.00	0.00	0.00	0.00
Vegetables	6.48	7.23	9.77	11.45	14.20	16.88
Fruits (fresh)	0.00	1.85	2.50	4.39	5.45	8.09
61st Round						
Cereals	16.93	14.20	23.45	19.94	31.22	27.34
Pulses & products	3.13	3.08	4.76	4.79	6.83	7.04
Milk & products	23.95	17.16	52.04	34.32	90.28	61.24
Edible Oils	4.14	4.97	6.27	7.10	9.40	10.36
Eggs, fish and meat	2.82	2.37	6.58	5.92	13.64	10.65
Vegetables	8.65	8.58	11.72	12.31	16.24	17.57
Fruits (fresh)	2.19	2.60	4.08	4.91	7.52	9.47
66th Round						
Cereals	15.65	16.22	22.67	22.58	30.36	30.30
Pulses & products	4.13	4.45	6.60	6.72	10.04	9.74
Milk & products	29.15	26.24	53.54	46.52	97.17	73.96
Edible Oils	3.64	4.37	5.47	6.32	8.91	9.54
Eggs, fish and meat	2.43	1.99	6.07	5.17	9.72	11.13
Vegetables	8.50	8.99	12.15	13.18	17.81	18.69
Fruits (fresh)	2.02	2.39	3.64	4.77	6.88	8.75

(Source: Author's calculation based on NSSO data)

In the State of Haryana, it may be seen from table 60 that MPCE on cereals has declined both in rural and urban areas, MPCE on edible oil has declined in rural areas but increased in urban areas, while MPCE on pulses & products, milk & products, vegetables and fruits (Fresh) has increased from 50th to 66th round in all the three MPCE ranges. Among non-food items (table 61), it is evident that MPCE on tobacco, fuel and light and education has increased from 50th round to 66th round in all the three MPCE ranges.

Table 61: MPCE range of Major non-food items (Haryana) at constant prices

Items	L (Poorest 25%)		Median		U (Richest 25%)	
	Rural	Urban	Rural	Urban	Rural	Urban
50th Round						
Tobacco	0.91	0.00	4.49	0.69	6.82	6.94
Intoxicants	0.00	0.00	0.00	0.00	0.00	0.00
Fuel & light	9.09	10.64	13.49	16.59	19.66	21.79
Clothing	0.00	0.00	0.00	0.00	12.39	0.00
Footwear	0.00	0.00	0.00	0.00	5.11	0.00
Education	1.92	2.54	7.95	12.25	25.34	33.18
61st Round						
Tobacco	3.76	3.55	5.64	5.33	7.52	7.10
Intoxicants	5.64	4.73	11.29	8.88	20.31	16.57
Fuel & light	19.94	19.53	28.21	29.85	38.62	40.43
Clothing	9.87	11.83	18.81	20.71	35.11	38.46
Footwear	3.76	3.85	6.90	7.40	12.54	17.75
Education	4.08	7.40	10.03	17.75	22.57	42.01
66th Round						
Tobacco	2.98	2.39	4.05	3.98	7.29	7.16
Intoxicants	4.86	4.77	8.50	9.54	16.19	19.48
Fuel & light	18.02	19.68	25.20	26.96	33.87	36.58
Clothing	8.10	7.95	16.19	15.90	31.58	33.80
Footwear	3.64	3.98	7.09	8.35	15.18	16.70
Education	2.83	6.16	10.12	19.88	32.39	51.09

(Source: Author's calculation based on NSSO data)

Table 62: MPCE range of Major food items (Kerala) at constant prices

Items	L (25%)		Median (50%)		U (75%)	
	Rural	Urban	Rural	Urban	Rural	Urban
50th Round						
Cereals	24.25	21.45	34.54	31.33	46.59	42.89
Pulses & products	1.48	1.50	3.41	3.70	6.19	6.47
Milk & products	0.00	3.90	9.09	12.14	19.89	23.12
Edible Oils	3.69	4.05	5.80	6.24	8.64	9.25
Eggs, fish and meat	2.84	8.09	7.95	17.34	15.68	29.83
Vegetables	4.83	4.57	8.01	7.86	12.27	12.54
Fruits (fresh)	6.25	6.94	11.36	12.14	18.18	19.08
61st Round						
Cereals	20.69	12.31	29.53	17.51	39.12	19.64
Pulses & products	2.57	0.00	4.51	0.00	7.27	0.00
Milk & products	6.71	0.00	13.17	0.00	21.00	0.00
Edible Oils	4.39	0.00	6.83	0.00	9.78	0.00
Eggs, fish and meat	9.40	1.42	16.93	2.37	27.59	3.96
Vegetables	6.65	0.00	9.37	0.00	13.01	0.00

Fruits (fresh)	6.58	0.00	11.29	0.00	17.74	0.00
66th Round						
Cereals	16.36	15.83	25.10	23.82	34.70	32.60
Pulses & products	3.56	3.86	5.91	6.36	9.15	9.62
Milk & products	6.80	7.16	12.15	11.93	19.43	22.66
Edible Oils	3.16	3.10	4.53	4.37	6.15	6.20
Eggs, fish and meat	12.15	11.93	20.65	20.68	31.58	32.60
Vegetables	6.11	6.00	8.87	8.57	12.27	12.37
Fruits (fresh)	4.86	4.77	7.87	8.35	12.15	13.12

(Source: Author's calculation based on NSSO data)

Table 63: MPCE range of Major non-food items (Kerala) at constant prices

Items	L (25%)		Median (50%)		U (75%)	
	Rural	Urban	Rural	Urban	Rural	Urban
50th Round						
Tobacco	0.00	0.00	0.91	0.00	5.17	4.80
Intoxicants	5.68	6.01	11.88	11.79	22.73	26.01
Fuel & light	7.94	9.01	11.42	13.88	16.14	19.85
Clothing	0.00	0.00	0.00	0.00	0.19	1.54
Footwear	0.00	0.00	0.00	0.00	0.00	0.00
Education	0.24	0.24	0.72	0.92	1.80	2.17
61st Round						
Tobacco	2.51	0.00	5.17	0.00	9.40	0.00
Intoxicants	7.52	0.00	12.54	0.00	22.57	0.00
Fuel & light	12.92	13.77	18.28	20.68	25.99	29.68
Clothing	10.97	12.43	22.57	26.92	45.77	53.25
Footwear	3.76	4.14	6.90	7.69	12.54	12.13
Education	6.14	5.80	8.15	8.64	20.94	18.93
66th Round						
Tobacco	2.43	2.39	4.86	5.57	9.72	11.93
Intoxicants	6.48	6.36	12.15	10.34	21.46	19.88
Fuel & light	12.11	13.20	16.72	18.53	22.51	25.61
Clothing	9.72	12.72	21.46	26.64	47.37	54.95
Footwear	3.64	4.77	7.09	8.75	12.15	14.51
Education	4.86	4.77	6.88	6.84	17.21	19.48

(Source: Author's calculation based on NSSO data)

In Kerala, among food items (table 62) MPCE on cereals, edible oil and fruits (fresh) has declined at constant prices while it has increased in the remaining food items pulses & products, milk, egg, fish and meat and vegetables from 50th to 66th round in all the three ranges. Among non-food items (table 63), MPCE on intoxicants has

increased in the upper bound both in rural and urban areas while MPCE on education has increased from 50th to 66th round.

Table 64: MPCE range of Major food items (Madhya Pradesh) at constant prices

Items	L (25%)		Median (50%)		U (75%)	
	Rural	Urban	Rural	Urban	Rural	Urban
50th Round						
Cereals	22.73	20.35	35.11	30.06	52.50	44.51
Pulses	3.75	5.55	6.48	8.32	10.34	11.68
Milk & products	0.00	7.28	5.97	18.50	20.45	36.42
Edible Oils	3.64	6.47	6.59	10.40	10.00	15.72
Eggs, fish and meat	0.00	0.00	0.00	0.00	4.20	5.78
Vegetables	4.94	7.75	7.61	11.73	11.48	16.76
Fruits (fresh)	0.00	0.81	0.80	2.43	2.27	5.55
61st Round						
Cereals	16.93	16.57	25.14	24.08	33.96	33.37
Pulses	3.64	3.96	5.45	5.74	7.34	8.05
Milk & products	6.27	8.28	12.23	15.09	24.85	30.77
Edible Oils	4.51	5.33	6.27	7.69	8.88	11.24
Eggs, fish and meat	2.32	2.96	4.39	5.92	7.10	10.65
Vegetables	5.64	6.80	8.21	10.00	10.95	13.85
Fruits (fresh)	1.00	1.18	1.76	2.43	3.08	5.09
66th Round						
Cereals	15.79	15.71	24.29	23.26	34.19	31.97
Pulses	4.86	5.57	7.29	8.35	11.13	11.77
Milk & products	7.29	10.74	14.57	18.89	26.24	32.21
Edible Oils	3.58	4.37	5.57	6.76	7.95	9.54
Eggs, fish and meat	2.43	3.18	4.05	6.04	7.75	9.94
Vegetables	5.18	6.52	7.77	9.66	11.05	13.68
Fruits (fresh)	0.89	1.19	1.62	2.39	2.98	4.77

(Source: Author's calculation based on NSSO data)

Table 65: MPCE range of Major non-food items (MP) at constant prices

Items	L (25%)		Median (50%)		U (75%)	
	Rural	Urban	Rural	Urban	Rural	Urban
50th Round						
Tobacco	0.45	0.00	1.70	0.52	4.77	3.82
Intoxicants	2.27	4.62	4.09	8.32	6.82	16.18
Fuel & light	7.19	9.54	10.68	14.39	15.23	19.78
Clothing	0.00	0.00	0.00	0.00	7.95	6.47
Footwear	0.00	0.00	1.25	0.00	0.00	0.00
Education	0.00	0.00	2.27	6.94	11.36	23.12
61st Round						
Tobacco	0.75	0.80	2.82	2.96	5.64	5.80
Intoxicants	2.51	3.55	4.08	5.92	6.77	11.24
Fuel & light	11.35	15.09	16.80	23.02	24.14	32.96
Clothing	6.27	5.92	12.54	13.02	24.45	27.81
Footwear	2.82	2.96	5.02	5.92	10.03	13.02
Education	1.57	4.14	4.39	8.88	12.23	23.08
66th Round						
Tobacco	0.97	1.19	2.23	2.39	4.86	5.17
Intoxicants	2.43	3.98	4.86	7.95	8.10	12.72
Fuel & light	12.47	16.30	18.02	23.36	25.06	31.93
Clothing	5.71	7.36	10.53	14.31	20.24	31.81
Footwear	2.43	3.18	4.05	5.96	7.29	11.53
Education	1.82	3.78	4.05	10.54	10.12	27.83

(Source: Author's calculation based on NSSO data)

It may be seen from table 64 that in Madhya Pradesh, MPCE on cereals and edible oil has declined while it has increased in pulses, milk & products, vegetables and fruits (fresh) from 50th to 66th round. In case of non-food items (table 65) MPCE on tobacco has increased, MPCE on intoxicants has declined in rural area but increased in urban area while in the remaining non-food items fuel & light and education it has increased from 50th to 66th round.

Table 66: MPCE range of Major food items (Maharashtra) at constant prices

Items	L (25%)		Median (50%)		U (75%)	
	Rural	Urban	Rural	Urban	Rural	Urban
50th Round						
Cereals	14.83	18.90	24.09	29.48	36.74	40.46
Pulses & products	4.66	5.32	7.05	7.98	10.23	10.98
Milk & products	2.27	7.89	6.82	18.21	17.05	38.84
Edible Oils	4.55	8.32	7.95	13.87	12.73	19.77
Eggs, fish & meat	0.00	0.00	2.36	3.47	6.82	13.85
Vegetables	4.55	6.99	6.93	11.91	10.11	18.96
Fruits (fresh)	0.00	1.39	1.30	4.05	3.30	9.48
61st Round						
Cereals	15.80	12.31	23.64	17.51	32.73	19.64
Pulses & products	4.14	4.50	6.27	5.98	8.90	7.72
Milk & products	4.01	15.98	9.40	15.98	18.81	15.98
Edible Oils	6.27	5.68	9.59	5.68	13.79	6.15
Eggs, fish & meat	3.76	2.13	6.52	2.13	10.66	2.13
Vegetables	6.33	5.33	9.00	5.44	11.97	8.22
Fruits (fresh)	1.25	1.89	2.38	2.13	4.39	2.84
66th Round						
Cereals	16.19	18.29	23.89	26.32	33.66	36.06
Pulses & products	6.28	6.64	9.15	9.74	12.96	13.72
Milk & products	6.07	10.54	12.15	17.61	20.24	31.01
Edible Oils	4.05	6.56	6.07	9.54	8.42	12.72
Eggs, fish & meat	4.45	5.96	7.49	10.34	8.26	17.89
Vegetables	6.84	8.31	9.51	11.97	12.96	16.74
Fruits (fresh)	1.30	1.99	2.43	4.14	4.41	7.83

(Source: Author's calculation based on NSSO data)

Table 67: MPCE range of Major non-food items (Maharashtra) at constant prices

Items	L (25%)		Median (50%)		U (75%)	
	Rural	Urban	Rural	Urban	Rural	Urban
50th Round						
Tobacco	0.00	0.00	0.63	0.00	2.05	1.73
Intoxicants	0.00	0.00	0.00	0.00	0.00	0.00
Fuel & light	7.10	10.24	10.11	16.36	14.52	24.74
Clothing	0.00	0.00	0.00	0.00	0.00	0.00
Footwear	0.00	0.00	0.00	0.00	0.00	0.00
Education	0.00	0.92	3.98	9.60	13.64	24.86
61st Round						
Tobacco	0.94	4.44	1.88	4.44	3.76	5.18
Intoxicants	3.01	4.73	5.64	8.88	10.03	17.75
Fuel & light	11.29	17.14	17.43	26.33	25.71	36.57
Clothing	7.21	8.88	15.05	20.12	31.35	47.34
Footwear	3.13	3.55	5.02	7.10	8.78	14.79
Education	1.88	3.55	4.23	6.27	10.03	20.12
66th Round						
Tobacco	1.21	1.19	2.43	2.39	4.05	5.96
Intoxicants	3.64	3.98	6.07	8.35	12.15	16.70
Fuel & light	13.52	16.66	18.22	23.58	24.49	32.72
Clothing	6.07	8.95	14.17	21.47	28.95	47.71
Footwear	2.63	3.58	4.86	7.16	8.10	13.92
Education	1.94	3.50	3.64	5.96	8.10	19.88

(Source: Author's calculation based on NSSO data)

In Maharashtra it is evident from table 66 that MPCE in cereals has increased in the lower bound but declined in the upper bound while in the remaining food items viz. pulses & products, milk & products, edible oil, vegetables and fruits (fresh) has increased from 50th to 66th round. Among non-food items (table 67), it may be seen that MPCE on fuel & light and education has increased from 50th to 66th round.

Table 68: MPCE range of Major food items (Odisha) at constant prices

Items	L (25%)		Median (50%)		U (75%)	
	Rural	Urban	Rural	Urban	Rural	Urban
50th Round						
Cereals	30.68	21.16	5.97	38.96	61.36	56.30
Pulses & products	1.27	2.08	2.73	3.10	4.77	8.67
Milk & products	0.00	0.00	0.00	4.97	4.66	17.34
Edible Oils	1.88	3.12	3.64	6.07	5.80	10.40
Eggs, fish & meat	1.14	1.39	3.41	6.94	7.95	15.38
Vegetables	6.25	8.67	9.49	13.29	14.09	19.83
Fruits (fresh)	0.00	0.58	0.57	2.31	2.05	5.43
61st Round						
Cereals	21.69	21.18	32.92	31.01	45.52	43.42
Pulses & products	1.88	2.49	3.51	4.11	5.64	6.39
Milk & products	3.13	4.50	7.52	10.65	13.17	19.53
Edible Oils	2.82	3.55	4.62	5.33	7.52	8.52
Eggs, fish & meat	2.19	2.96	4.39	5.92	8.28	11.60
Vegetables	6.83	7.87	10.16	11.42	15.27	16.45
Fruits (fresh)	0.88	1.07	1.63	2.28	3.13	4.26
66th Round						
Cereals	16.60	18.61	26.40	29.42	38.54	40.16
Pulses & products	3.04	3.98	5.26	6.76	8.10	10.34
Milk & products	3.24	4.83	6.84	10.60	12.15	17.89
Edible Oils	2.83	3.38	4.25	5.25	6.36	7.85
Eggs, fish & meat	2.83	3.78	5.14	7.55	9.43	12.72
Vegetables	7.17	8.47	10.36	12.41	15.26	17.81
Fruits (fresh)	0.81	1.27	1.46	2.47	2.63	5.17

(Source: Author's calculation based on NSSO data)

Table 69: MPCE range of Major non-food items (Odisha) at constant prices

Items	L (25%)		Median (50%)		U (75%)	
	Rural	Urban	Rural	Urban	Rural	Urban
50th Round						
Tobacco	0.40	0.00	0.91	0.49	1.93	2.01
Intoxicants	1.70	2.89	3.41	5.66	6.82	9.83
Fuel & light	6.52	8.58	10.00	15.17	15.84	22.31
Clothing	0.00	0.00	0.00	0.00	5.68	11.10
Footwear	0.00	0.00	0.00	0.00	0.00	0.00
Education	0.00	0.00	2.27	5.78	7.95	19.88
61st Round						
Tobacco	0.63	0.59	0.94	1.18	1.88	2.66
Intoxicants	1.41	2.37	2.51	4.44	5.02	7.10
Fuel & light	8.59	11.18	13.32	18.46	20.75	27.28

Clothing	5.02	5.33	11.29	12.13	20.69	26.27
Footwear	2.19	2.66	2.82	3.91	5.64	7.69
Education	2.01	2.66	4.51	6.33	11.91	20.24
66th Round						
Tobacco	0.40	0.60	0.85	1.19	1.66	2.29
Intoxicants	1.21	2.39	2.43	3.88	4.86	6.36
Fuel & light	9.88	11.81	14.53	18.27	21.13	23.86
Clothing	4.31	5.17	9.31	11.93	17.41	27.04
Footwear	2.02	2.39	2.83	3.98	4.86	6.96
Education	1.62	2.86	4.05	8.35	9.72	23.06

(Source: Author's calculation based on NSSO data)

It may be seen from table 68 that in Odisha among food items, MPCE on cereals has declined while it has increased in other food items viz pulses & products, edible oil, eggs, fish & meat, vegetables and fruits (fresh) from 50th to 66th round. In case of non-food items (table 69), MPCE on intoxicants has declined while it has increased in fuel & light from 50th to 66th round.

Table 70: MPCE range of Major food items (Tamil Nadu) at constant prices

Items	L (25%)		Median		U (25%)	
	Rural	Urban	Rural	Urban	Rural	Urban
50th Round						
Cereals	22.20	30.03	30.13	42.61	43.68	68.72
Pulses & products	2.73	3.70	4.83	6.36	7.95	9.94
Milk & products	0.00	0.58	3.98	10.40	10.23	20.81
Edible Oils	3.27	3.93	4.55	6.59	7.73	10.12
Eggs, fish and meat	0.34	0.29	4.55	6.24	9.26	12.37
Vegetables	5.11	6.18	7.22	9.25	10.00	13.24
Fruits (fresh)	0.91	1.62	2.05	3.18	4.32	6.01
61st Round						
Cereals	13.79	15.38	22.51	23.31	32.73	32.96
Pulses & products	3.39	3.91	5.42	5.80	7.90	8.52
Milk & products	5.02	7.81	9.40	12.43	15.52	22.16
Edible Oils	3.76	4.44	5.77	6.51	7.79	9.11
Eggs, fish and meat	3.76	4.14	6.90	7.69	11.29	12.43
Vegetables	6.47	6.78	9.03	9.53	12.40	12.96
Fruits (fresh)	1.41	1.78	2.63	3.08	4.64	5.86
66th Round						
Cereals	9.11	11.13	16.17	20.32	25.14	31.05
Pulses & products	4.45	4.93	6.80	7.75	10.04	11.25
Milk & products	6.88	8.95	10.93	14.31	17.49	23.86

Edible Oils	3.12	3.58	4.70	5.09	6.40	7.16
Eggs, fish and meat	4.86	5.25	8.02	9.17	12.55	14.91
Vegetables	5.63	6.16	8.18	8.93	11.05	12.49
Fruits (fresh)	1.42	1.89	2.71	3.66	4.66	6.82

(Source: Author's calculation based on NSSO data)

Table 71: MPCE range of Major non-food items (Tamil Nadu) at constant prices

Items	L (Poorest 25%)		Median		U (Richest 25%)	
	Rural	Urban	Rural	Urban	Rural	Urban
50th Round						
Tobacco	0.00	0.00	0.00	0.00	2.57	2.89
Intoxicants	0.00	0.00	0.00	0.00	0.00	0.00
Fuel & light	5.09	7.69	7.30	12.15	10.70	18.20
Clothing	0.00	0.00	0.00	0.00	0.00	0.00
Footwear	0.00	0.00	0.00	0.00	0.00	0.00
Education	0.00	0.00	2.27	4.62	10.34	14.45
61st Round						
Tobacco	1.88	2.37	3.76	4.73	6.90	7.99
Intoxicants	3.76	5.33	7.52	8.88	13.29	15.00
Fuel & light	9.25	11.08	12.49	16.92	17.20	24.70
Clothing	9.40	11.83	21.94	26.63	48.90	55.62
Footwear	1.88	2.37	3.13	4.73	5.64	8.88
Education	1.38	2.37	3.76	6.51	10.53	13.02
66th Round						
Tobacco	1.52	1.99	3.24	4.29	6.64	8.35
Intoxicants	4.86	5.17	8.10	9.94	12.15	18.99
Fuel & light	8.34	9.58	11.66	14.23	15.83	19.24
Clothing	4.86	9.94	13.40	22.66	34.41	47.12
Footwear	1.62	2.58	2.83	5.17	5.26	9.94
Education	1.54	1.99	3.44	4.77	8.91	12.72

(Source: Author's calculation based on NSSO data)

It is evident from table 70 that in Tamil Nadu, MPCE on cereals and edible oil has declined while it has increased in other food items viz. pulses & products, milk & products, egg, fish and meat, vegetables and fruits (fresh) from 50th to 66th round among all the three MPCE ranges. In case of non-food items (table 71) it may be seen that MCPE on fuel and light has increased.

6.5 Food and non-food expenditure proportions

Food and non-food expenditure proportion in 50th round, 61st round and 66th round for rural and urban areas are given in Table 72 and 73 respectively. Graphical representation of food and non-food proportion among selected states in 50th, 61st and 66th round is given in Graphs 6, 7 and 8 respectively. In the 50th round there was wide gap between food and non food proportion both in rural and urban areas. Food proportion was much higher than non-food proportion. While the gap between food and non-food expenditure proportion remains almost same in rural areas, it has declined in urban areas.

Table 72: Food and non-food proportions (Rural)

States	50 th Round		61 st Round		66 th Round	
	Food (%)	Non-food (%)	Food (%)	Non-food (%)	Food (%)	Non-food (%)
All India	67.17	32.82	61.58	38.42	67.32	32.68
Bihar	72.75	27.25	67.01	32.99	72.05	27.95
Goa	61.88	38.12	56.51	43.49	57.35	42.65
Haryana	64.24	35.76	57.61	42.39	65.3	34.7
Kerala	64.52	35.48	53.45	46.55	56.55	43.45
Madhya Pradesh	58.53	41.47	58.4	41.6	66.75	33.25
Maharashtra	63.48	36.52	57.64	42.36	65.17	34.83
Odisha	70.32	29.68	66.57	33.43	73.11	26.89
Tamil Nadu	68.14	31.86	60.45	39.55	64.06	35.94

(Source: Author's calculation based on NSSO data)

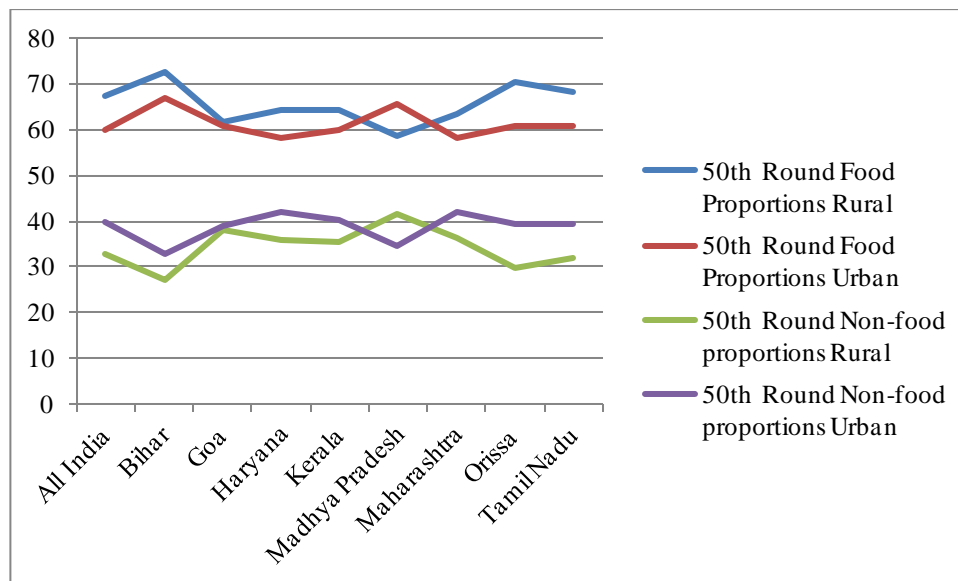
Table 73: Food and non-food proportions (Urban)

	50 th Round		61 st Round		66 th Round	
	Food (%)	Non-food (%)	Food (%)	Non-food (%)	Food (%)	Non-food (%)
All India	60	40	48.72	51.28	53.51	46.49
Bihar	67.11	32.89	57	43	61	39
Goa	60.97	39.03	46	54	46	54
Haryana	58.08	41.92	46.11	53.89	52.2	47.8
Kerala	60	40	44.81	55.19	48.08	51.92
Madhya Pradesh	65.55	34.45	47.81	52.19	52.58	47.42
Maharashtra	58.1	41.9	44.75	55.25	49.82	50.18
Odisha	60.74	39.26	55.2	44.8	58.21	41.79
Tamil Nadu	60.67	39.33	47.82	52.18	52.22	47.78

(Source: Author's calculation based on NSSO data)

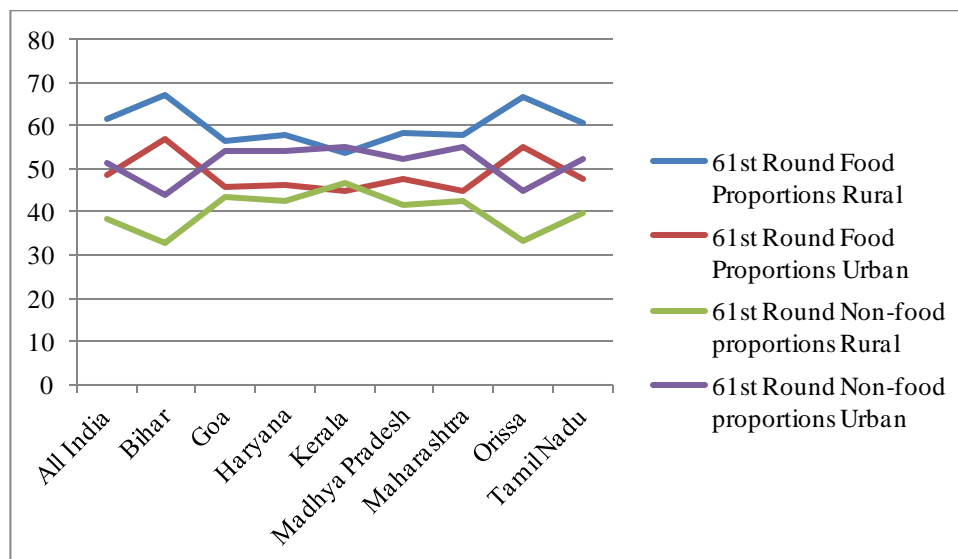
Graphical representation of food and non-food proportions is given below:

Figure 6: Food and non-food proportions (50th Round)



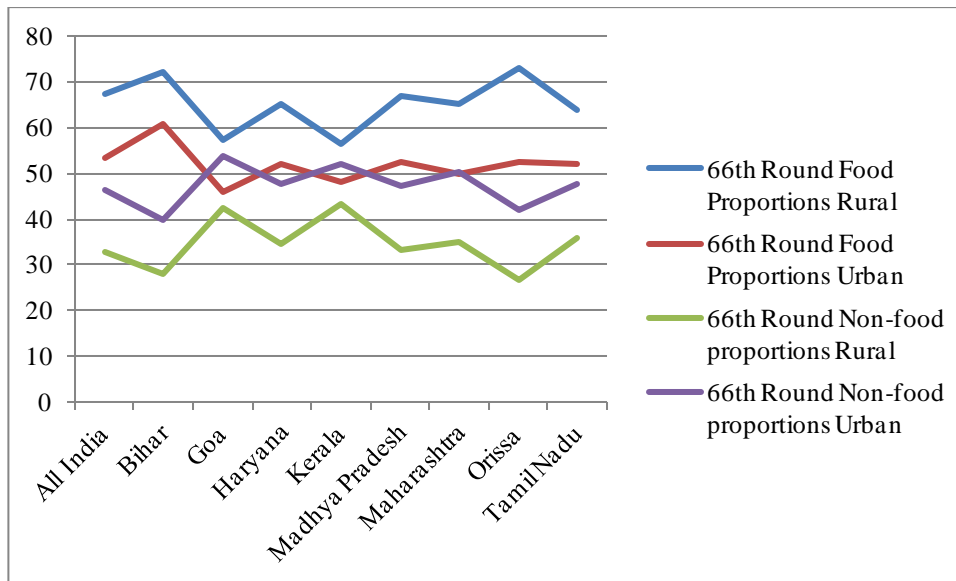
(Source: Author's calculation based on NSSO data)

Figure 7: Food and non-food proportions (61st Round)



(Source: Author's calculation based on NSSO data)

Figure 8: Food and non-food proportions (66st Round)



(Source: Author's calculation based on NSSO data)

In the next section we examine expenditure inequality in the 8 states using the Gini coefficient to measure inequality.

6.6 Expenditure inequality among selected states

Gini coefficient showing expenditure inequality among the 8 selected states in India is given in Table 74. The highest inequality is observed in Kerala a socially well developed state. As per a NSSO recent report higher inequality in Kerala may be due to high foreign remittances (Yadu and B.Sateesha 2016). In Kerala inequality has increased from 50th to 66st round both in rural and urban areas. In all the other states including all India average the Gini coefficient declined from 50th round to 66st round in rural areas.

The inequality distance in Goa both within rural and urban areas as well as between rural and urban areas is low and more or less stable in all the rounds. i.e., in rural areas it ranged from 30 to 32 per cent and in urban areas it ranged from 31 to 40 per

cent. But, in Bihar though the inequality distance within rural and urban areas is relatively low, between rural and urban areas it is higher. It is interesting to note that inequality in Kerala is more than Goa and all-India average, which varies from around 34 to 51 per cent. In Tamil Nadu, inequality has declined considerably both in rural and urban areas from 50th to 66th round. In Odisha there is marginal decline in inequality both in rural and urban areas. In Maharashtra, while rural inequality has declined, urban inequality has increased from 50th to 66th round. However, in Haryana, rural inequality has declined marginally while urban inequality has increased. In Madhya Pradesh, inequality has shown declining trend both in rural and urban areas.

Table 74: Expenditure inequality (Gini Coefficient)

States	50 th round		61 st round		66 th round	
	Rural	Urban	Rural	Urban	Rural	Urban
All India	0.37	0.38	0.38	0.40	0.36	0.37
Bihar	0.35	0.38	0.32	0.35	0.28	0.36
Goa	0.37	0.31	0.32	0.46	0.30	0.37
Haryana	0.39	0.33	0.36	0.41	0.38	0.36
Kerala	0.35	0.41	0.44	0.40	0.51	0.48
Madhya Pradesh	0.39	0.37	0.38	0.39	0.34	0.33
Maharashtra	0.38	0.37	0.38	0.42	0.35	0.41
Odisha	0.36	0.37	0.40	0.38	0.33	0.36
Tamil Nadu	0.39	0.40	0.41	0.40	0.30	0.35

(Source: Author's calculation based on NSSO data)

In the next section we present the graphical representation of inequality of all India level.

Lorenz Curve analysis

The Lorenz curve is the graphical representation of Gini coefficient. The Lorenz curves of food, non-food and total expenditure of 50th, 61st and 66th round for rural and urban areas combined are given below in figure 9, 10 and 11. In all the rounds it

is evident that non-food expenditure inequality is higher than food inequality. For the 66th round we see a declining gap in inequality between food and non-food items.

Figure 9: Lorenz Curve (All India— 50th Round)

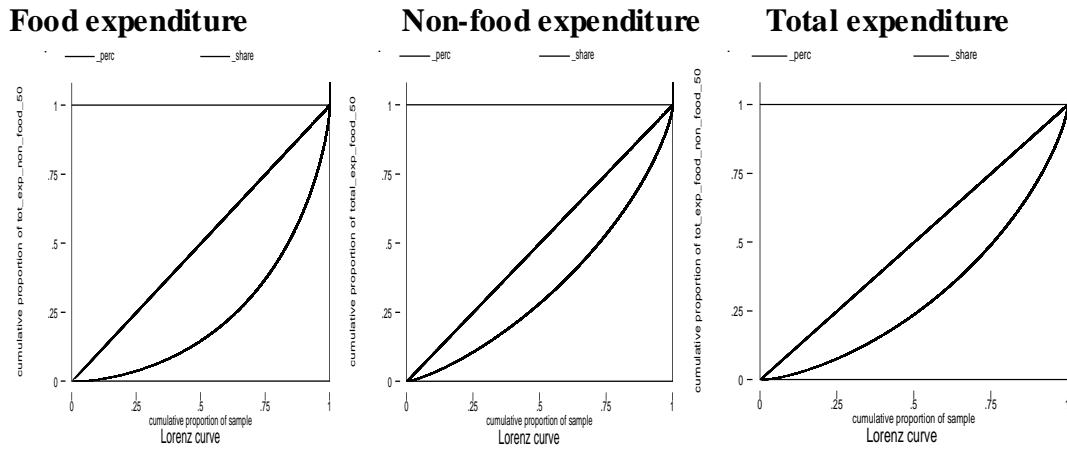


Figure 10: Lorenz Curve (All India- 61st Round)

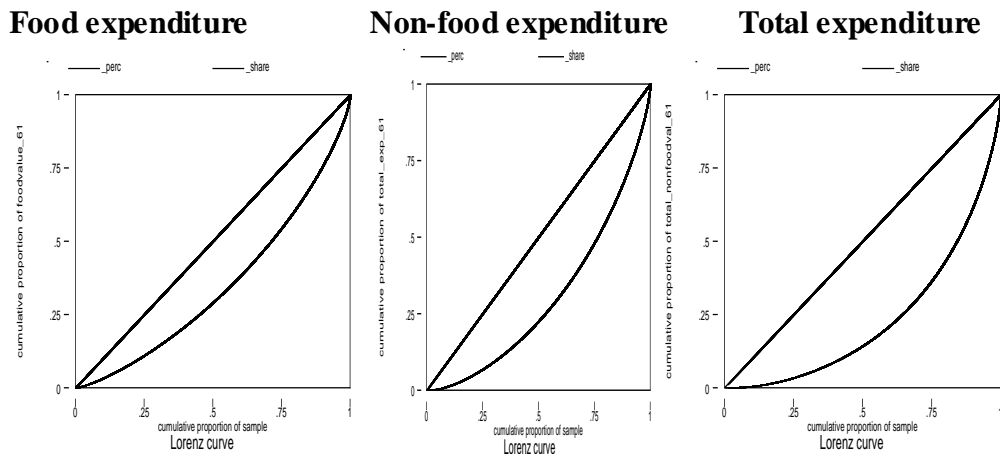
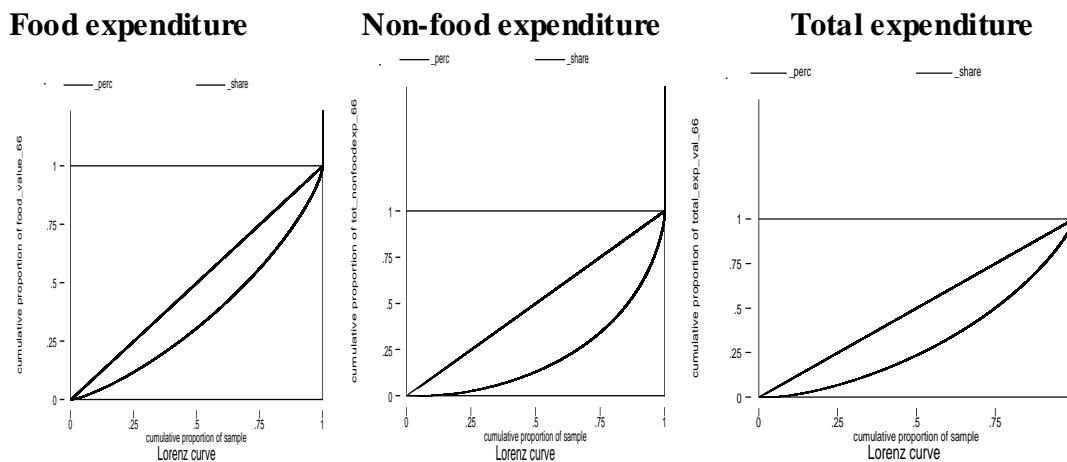


Figure 11: Lorenz Curve (All India- 66th Round)



6.7 Conclusion

In this chapter we have compared major food and non-food items of all India average MPCE with 8 selected states, viz, Bihar, Goa, Haryana, Kerala, Madhya Pradesh, Maharashtra, Odisha and Tamil Nadu in respect of 3 rounds. We find that Bihar a poor state shows higher expenditure on essential item like cereals and lower expenditure on high value food items like egg, fish and meat. On the other hand relatively rich states like Goa and Kerala reveal higher expenditure on high value food items like egg, fish and meat. Goa and Kerala similarly spend more on fruits than the national average. In case of non-food items too, better off states exhibit higher expenditure on items like Clothing, fuel & light and rent. Overall expenditure on non-food items is higher in case of better off states like Goa and Kerala in comparison with all India average and Bihar.

We find that the gap between the lower and upper bound of MPCE lower in Bihar in comparison with the Goa and Kerala. Interestingly the lower bound of rural MPCE of Goa is more than the upper bound of MPCE of Bihar.

In rural areas, the lower bound (L) MPCE of Goa is either higher or marginally close to the upper bound (U) MPCE in respect of Bihar, Odisha, Madhya Pradesh, Maharashtra and All India in all the three rounds. However, similar trend is not seen in urban areas.

In rural areas the all-India MPCE in the upper bound is marginally higher than the Lower bound of MPCE of Goa. Thus, the distance in MPCE between Goa and is high, more in rural areas than in urban areas. This trend is visible in all the four round of NSS i.e. 50th round, 55th round, 61st round and 66th round. Similar trend in

MPCE range of expenditure is seen both major food and non-food items in selected states and All India.

In the 50th round there was wide gap between food and non food proportion both in rural and urban areas. Food proportion was much higher than non-food proportion. However, this gap between food and non-food expenditure has declined significantly both in rural and urban areas mainly due to increase in non-food expenditure.

Gini Coefficient analyses that in the recent 66th round of NSSO, the inequality in rural areas in Bihar was lowest (28 per cent) while it was highest in Kerala (51 per cent). In urban areas, it was lowest in Madhya Pradesh (33 per cent), while it was highest again in Kerala (48 per cent). Further, Lorenz curve analysis reveals that in all the rounds non-food expenditure inequality is higher than food inequality. The 66th round shows declining gap in inequality between food and non-food items.

In the next chapter we discuss more about the inequality trends in India within the sectors, social groups and religion.

Chapter 7

Consumption Inequality in India

7.1 Introduction

In this chapter we discuss in detail on the consumption inequality in India. We have further decomposed consumption inequality across different social groups and major religions. The decomposition analysis of MPCE is further compared with Kuznets curve. Proportion of food expenditure in the total expenditure across social groups and religion has also been studied. The characteristics of a household that determine its expenditure pattern have been studied using regression analysis.

7.2 Consumption inequality

In order to measure consumption inequality Gini coefficients of MPCE has been estimated for rural and urban areas separately (Table 75). For a perfectly equal distribution, there would be no area between the 45 degree line and the Lorenz curve -- a Gini coefficient of zero. For complete inequality, in which only one person has all the income and others don't have any income.(if that were possible) the Lorenz curve would coincide with the straight lines at the lower and right boundaries of the curve, so the Gini coefficient would be one. Real economies have some, but not complete inequality, so the Gini coefficients for real economic systems are between zero and one.

The level of consumption inequality has declined marginally over the years both in rural and urban areas. Further, difference in inequality between rural and urban areas is also marginal.

Table 75: Consumption inequality (Gini coefficient) in India

NSSO Round	Rural	Urban
50th	0.37	0.38
61st	0.38	0.40
66th	0.36	0.37

(Source: Author's calculation based on NSSO data)

7.3: Decomposition of Consumption inequality

In order to understand the inequality among different social groups and across major religions in India, the inequality decomposition is measured using Stata. This analysis consists of percentile ratio, Generalised entropy index, Gini coefficient and Atkinson index. The Atkinson's index is a measure which is useful in determining which end of the distribution contributed most to the observed inequality. The percentile ratio is the ratio of two percentiles in the distribution. For example we could have a top and bottom 10 percentile ratios or a top and bottom 25 per cent to poor 10 percentile. Generalized entropy index gives Gini inequality measure at different level of sensitivity from lowest to highest i.e. Alpha being -1, 0, 1 and 2. The Atkinson index too gives the inequality measure, which reveals the inequality among poor is the lowest while the inequality among the high spending group is the highest. The entropy measures have the desirable property of being decomposable so that inequality within a group (intra-group inequality) and between groups (inter-group inequality) can be estimated.

Accordingly, inequality decomposition of social groups among different religions in India is studied using decomposition analysis. The results of social group-wise decomposition analysis in different rounds and across religions both in rural and urban areas are given in Table 76 to 84. The social groups used in the analysis are ST, SC, OBC and Others, while the religions taken for analysis are Hindus, Christians and Muslims. The NSSO reports also include the following religions – Sikhs, Jainism, Buddhism, Zoroastrianism and others. However, since the proportion of these is much smaller we did not use it in our analysis. In this chapter we present data for three rounds for each religion separately.

7.3.1 Inequality among Hindus

Inequality decomposition of social groups among Hindus in 50th, 61st and 66th rounds is given in Table 76, 77 and 78 respectively.

Table 76: Inequality decomposition of social groups among Hindus (50th Round)

Social groups	Measures (Rural)											
	Percentile ratios				GE			Gini	Atkinson's Indices			
	p90/p10	p90/p50	p10/p50	p75/p25	GE(0)	GE(1)	GE(2)		A(0.5)	A(1)	A(2)	
ST	3.09	1.83	0.59	1.75	0.14	0.19	0.73	0.28	0.08	0.13	0.23	
SC	3.13	1.86	0.59	1.79	0.12	0.13	0.20	0.27	0.06	0.11	0.20	
OBC	--	--	--	--	--	--	--	--	--	--	--	
Others	3.58	2.04	0.57	1.91	0.16	0.20	0.45	0.31	0.09	0.15	0.26	
Social groups	Measures (Urban)											
	ST	4.78	2.47	0.52	2.21	0.22	0.24	0.35	0.37	0.11	0.20	0.33
	SC	4.07	2.21	0.54	2.03	0.19	0.22	0.41	0.34	0.10	0.17	0.31
OBC	--	--	--	--	--	--	--	--	--	--	--	
Others	5.18	2.59	0.50	2.36	0.24	0.29	0.69	0.39	0.12	0.22	0.36	

Note: 1. Generalized Entropy indices GE (a), where a = income difference sensitivity parameter, and Gini coefficient

2. Atkinson indices, A (e), where e > 0 is the inequality aversion parameter

3. Authors calculations using NSSO unit level data of 50th round.

Table 77: Inequality decomposition of social groups among Hindus (61st round)

Social groups	Measures (Rural)										
	Percentile ratios				GE			Gini	Atkinson's Indices		
	p90/p10	p90/p50	p10/p50	p75/p25	GE(0)	GE(1)	GE(2)		A(0.5)	A(1)	A(2)
ST	3.44	1.92	0.56	1.88	0.16	0.21	0.65	0.30	0.08	0.15	0.26
SC	3.17	1.92	0.61	1.79	0.15	0.20	0.59	0.29	0.08	0.14	0.23
OBC	3.43	1.99	0.58	1.87	0.17	0.24	0.90	0.32	0.09	0.16	0.25
Others	3.66	2.08	0.57	1.95	0.20	0.30	1.50	0.34	0.11	0.18	0.28
Social groups	Measures (Urban)										
	Percentile ratios				GE			Gini	Atkinson's Indices		
	p90/p10	p90/p50	p10/p50	p75/p25	GE(0)	GE(1)	GE(2)		A(0.5)	A(1)	A(2)
ST	5.43	2.68	0.49	2.50	0.22	0.23	0.31	0.37	0.11	0.20	0.35
SC	4.25	2.42	0.57	2.14	0.19	0.22	0.35	0.35	0.10	0.18	0.29
OBC	4.73	2.57	0.54	2.36	0.23	0.27	0.59	0.37	0.12	0.20	0.34
Others	5.35	2.34	0.44	2.48	0.25	0.31	0.90	0.39	0.13	0.22	0.37

Note: 1. Generalized Entropy indices GE (a), where a = income difference sensitivity parameter, and Gini coefficient

2. Atkinson indices, A (e), where e > 0 is the inequality aversion parameter

3. Authors calculations using NSSO unit level data of 50th round.

Table 78: Inequality decomposition of social groups among Hindus (66th round)

Social groups	Measures (Rural)										
	Percentile ratios				GE			Gini	Atkinson's Indices		
	p90/p10	p90/p50	p10/p50	p75/p25	GE(0)	GE(1)	GE(2)		A(0.5)	A(1)	A(2)
ST	3.44	1.90	0.55	1.86	0.14	0.16	0.27	0.29	0.07	0.13	0.23
SC	3.32	1.93	0.58	1.85	0.14	0.16	0.28	0.29	0.07	0.13	0.22
OBC	3.41	1.97	0.58	1.88	0.17	0.24	0.90	0.32	0.09	0.16	0.26
Others	3.70	2.09	0.57	1.97	0.19	0.26	0.84	0.34	0.10	0.17	0.28
Social groups	Measures (Urban)										
	Percentile ratios				GE			Gini	Atkinson's Indices		
	p90/p10	p90/p50	p10/p50	p75/p25	GE(0)	GE(1)	GE(2)		A(0.5)	A(1)	A(2)
ST	5.81	2.46	0.42	2.77	0.25	0.28	0.47	0.39	0.12	0.22	0.37
SC	5.01	2.47	0.49	2.47	0.23	0.27	0.62	0.37	0.11	0.20	0.34
OBC	5.13	2.39	0.47	2.42	0.23	0.27	0.56	0.37	0.12	0.21	0.34
Others	5.25	2.29	0.44	2.35	0.27	0.35	1.25	0.40	0.14	0.23	0.38

Note: 1. Generalized Entropy indices GE (a), where a = income difference sensitivity parameter, and Gini coefficient

2. Atkinson indices, A (e), where e > 0 is the inequality aversion parameter

3. Authors calculations using NSSO unit level data of 50th round.

The percentile ratio p90/p10 is the ratio of MPCE in the population at the top (90th percentile) versus the bottom (10th percentile). That means this is the ratio of MPCE of the people that is higher than the 90 per cent of the population to the MPCE of the people that is higher than the bottom 10 per cent of the population. This is nothing but the ratio of highest spending to the lowest spending. Similarly the percentile ratio of p90/p50 means ratio of MPCE of the people that is higher than 90 per cent of the population to the MPCE of the people that is higher than bottom 50 per cent of the

population. Similar is the interpretation for other percentile ratios i.e. p10/p50 and p75/p25.

Thus, from Table 76 we may interpret that in the household expenditure of 50th round among STs; highest spending people spend 3.09 times more than lowest spending people. This ratio is higher among 'others' (3.58 times), followed by SC and ST in rural areas. In case of urban areas this ratio is highest among others followed by ST and SC. Similar is the trend in other percentile ratios of p90/p50, and p75/p25. However, in the percentile ratio of p10/p50, there is marginal variation among social groups both in rural and urban areas.

In the 61st round, ratio (p90/p10) of highest spending to lowest spending people in rural areas is highest among 'Others' (3.66 times) followed by ST (3.44 times), OBC (3.43 times) and SC (3.17). In urban areas, it was highest among ST (5.43 times) followed by 'Others' (5.35 times), OBC 4.73 times) and SC (4.25 times). In other percentile ratios i.e. p90/50, p75/p25 and p10/p50, the ratio has declined.

In the 66th round too, the percentile ratios shows a marginal variation with 50th and 61st round. In rural areas the ratio p90/10 is highest among 'Others' (3.70 times) followed by ST (3.44 times), OBC (3.41 times) and SC (3.32 times). In urban areas, it was highest among ST (5.81 times) followed by 'Others' (5.25 times), OBC (5.13 times) and SC (5.01 times).

Generalized entropy index gives Gini inequality measure at different level of sensitivity from lowest to highest i.e. Alpha, the sensitivity parameter, being 0, 1 and 2. Alpha is the weight given to distances between MPCE at different parts of the MPCE distribution. GE (0) is the mean log deviation, GE (1) is the Theil index, and

GE (2) is half the squared coefficient of variation. Theil index is an inequality decomposition index which allows decomposing inequality into the part, i.e., due to inequality within areas (e.g. urban, rural) and the part that is due to differences between areas (e.g. the rural-urban income gap) (World Bank 2005).

It is evident from Table 76, 77 and 78 that in all the three rounds the inequality is showing an increasing trend from lower tail to upper tail of MPCE distribution among all the social groups both in rural and urban areas. In the 50th round in case of rural areas the gap in inequality between lower to upper tail of the distribution is highest amongst STs, while it is lowest among SCs. But, in urban areas it is highest among 'others' while it is lowest among STs. In the 61st round in rural areas, the gap is highest among other, while it is lowest among SCs. In urban areas, it is highest among others while it is lowest among STs. In the 66th round, the gap in inequality is the highest among OBCs and lowest among STs in rural areas while it is highest among 'Others' and lowest among STs in urban areas.

The Atkinson index is the most popular welfare-based measure of inequality. It presents the percentage of MPCE that a given society would have to forego in order to have more equal shares of MPCE between its citizens. This measure depends on the degree of society aversion to inequality, where a higher value entails greater social utility or willingness by individuals to accept smaller MPCE in exchange for a more equal distribution. The inequality aversion parameter in our study is 0.5, 1 and 2. It is evident from Tables 76, 77 and 78 that in all the three rounds inequality is showing a marginal variation with an increasing trend from lower tail to upper tail of the distribution both in rural and urban among all the social groups.

Gini index (see Tables 76, 77 and 78) reveals that in all the three rounds there is marginal variation in the inequality, both in rural and urban areas. The inequality is higher in urban areas than rural areas. In rural areas, the lowest inequality of 27 per cent is observed among SCs (50th round) and the highest inequality of 34 per cent is observed among ‘Others’ (61st and 66th round). In urban areas, the lowest inequality of 34 per cent is observed among SCs (50th round) and the highest inequality of 40 per cent is observed among ‘Others (66th round)’.

7.3.2 Inequality among Islam

Inequality decomposition of social groups among Islam in 50th, 61st and 66th rounds is given in Table 79, 80 and 81 respectively.

Table 79: Inequality decomposition of social groups among Muslims (50th Round)

Social groups	Measures (Rural)												
	Percentile ratios				GE			Gini	Atkinson's Indices				
	p90/p10	p90/p50	p10/p50	p75/p25	GE(0)	GE(1)	GE(2)		A(0.5)	A(1)	A(2)		
ST	2.84	1.68	0.59	1.73	0.10	0.10	0.12	0.24	0.05	0.10	0.18		
SC	3.01	1.84	0.61	1.70	0.13	0.13	0.16	0.27	0.06	0.12	0.24		
OBC	--	--	--	--	--	--	--	--	--	--	--		
Others	5.38	2.54	0.47	2.51	0.25	0.30	0.65	0.39	0.13	0.22	0.36		
Social groups	Measures (Urban)												
ST	3.12	1.96	0.63	1.67	0.11	0.12	0.15	0.26	0.06	0.11	0.19		
SC	4.93	2.74	0.56	2.24	0.26	0.31	0.52	0.40	0.13	0.23	0.36		
OBC	--	--	--	--	--	--	--	--	--	--	--		
Others	6.50	2.95	0.45	2.64	0.31	0.38	0.78	0.43	0.16	0.27	0.43		

Note: 1. Generalized Entropy indices GE (a), where a = income difference sensitivity parameter, and Gini coefficient

2. Atkinson indices, A (e), where e > 0 is the inequality aversion parameter

3. Authors calculations using NSSO unit level data of 50th round.

Table 80: Inequality decomposition of social groups among Islam (61st Round)

Social groups	Measures (Rural)											
	Percentile ratios				GE			Gini	Atkinson's Indices			
	p90/p10	p90/p50	p10/p50	p75/p25	GE(0)	GE(1)	GE(2)		A(0.5)	A(1)	A(2)	
ST	4.59	2.38	0.52	2.35	0.20	0.22	0.29	0.35	0.10	0.18	0.31	
SC	3.78	1.75	0.46	1.82	0.20	0.23	0.34	0.34	0.10	0.18	0.31	
OBC	4.00	2.27	0.57	2.03	0.22	0.30	0.78	0.36	0.12	0.20	0.30	
Others	3.33	1.97	0.59	1.82	0.14	0.19	0.49	0.29	0.08	0.13	0.22	
Social groups	Measures (Urban)											
	ST	5.25	2.31	0.44	2.37	0.26	0.32	0.68	0.39	0.13	0.23	0.37
	SC	3.65	1.97	0.54	1.78	0.13	0.13	0.14	0.29	0.06	0.12	0.23
OBC	4.30	2.49	0.58	2.10	0.20	0.24	0.38	0.35	0.10	0.18	0.30	
Others	4.78	2.49	0.52	2.38	0.22	0.25	0.40	0.37	0.11	0.19	0.33	

Note: 1. Generalized Entropy indices GE (a), where a = income difference sensitivity parameter, and Gini coefficient

2. Atkinson indices, A (e), where e > 0 is the inequality aversion parameter

3. Authors calculations using NSSO unit level data of 50th round.

Table 81: Inequality decomposition of social groups among Islam (66th Round)

Social groups	Measures (Rural)											
	Percentile ratios				GE			Gini	Atkinson's Indices			
	p90/p10	p90/p50	p10/p50	p75/p25	GE(0)	GE(1)	GE(2)		A(0.5)	A(1)	A(2)	
ST	3.40	1.92	0.56	1.95	0.17	0.21	0.32	0.33	0.09	0.16	0.26	
SC	3.47	1.93	0.56	1.76	0.12	0.13	0.16	0.27	0.06	0.11	0.20	
OBC	3.73	2.18	0.58	1.98	0.17	0.21	0.33	0.33	0.09	0.16	0.26	
Others	3.16	1.87	0.59	1.84	0.13	0.16	0.31	0.28	0.07	0.12	0.20	
Social groups	Measures (Urban)											
	ST	4.94	2.38	0.48	2.32	0.27	0.33	0.68	0.40	0.14	0.24	0.37
	SC	3.72	1.95	0.53	1.83	0.11	0.10	0.11	0.26	0.05	0.10	0.20
OBC	4.98	2.58	0.52	2.35	0.22	0.26	0.44	0.37	0.11	0.20	0.33	
Others	4.53	2.29	0.51	2.32	0.21	0.28	1.19	0.35	0.11	0.19	0.31	

Note: 1. Generalized Entropy indices GE (a), where a = income difference sensitivity parameter, and Gini coefficient

2. Atkinson indices, A (e), where e > 0 is the inequality aversion parameter

3. Authors calculations using NSSO unit level data of 50th round.

In the percentile ratio of 50th round, the ratio of MPCE that is higher than the 90 per cent of the population to the MPCE that is higher than the bottom 10 per cent of the population (p90/p10) is highest among “others” being 5.48 and 6.50 respectively in rural and urban areas. This ratio is higher in urban areas than rural among all the social groups. In other percentile ratios too i.e. p90/p50 and p75/25, it was highest among others both in rural and urban areas. However, in the percentile ratio of p10/p50, it was lowest among others category.

In the 61st round, among STs the MPCE that is higher than the 90 per cent of the population is 4.59 times the MPCE that is higher than the bottom 10 per cent of the population in rural areas and it is 5.25 times in urban areas. In rural areas the ratio p90/p10 is highest among STs and lowest among 'Others', while it is highest among STs and lowest among SCs in urban areas. In the ratio p90/p50, it is highest among STs and lowest among SCs in rural areas while it is highest among 'Others'/OBCs and lowest among SCs in urban areas. In the ratio p75/p25, it is highest among STs and lowest among SC/Others in rural areas while it is highest among 'Others' and lowest among SCs. The ratio p10/p50 shows marginal variation among different social groups both in rural and urban areas.

In the 66th round, in rural areas MPCE of highest spending people is 3.73 times the MPCE of lowest spending people among OBCs followed by SC (3.47), ST (3.40) and 'Others' (3.16). In urban areas it was highest among OBCs followed by ST, Others and SCs. In other ratios too i.e. p90/p50 and p75/p25, it was highest among OBCs both in rural and urban areas. There is marginal variation among different social groups in the ratio of p10/p50 both in rural and urban areas.

The Generalized Entropy index reveals that in all the three rounds (Table 79, 80 and 81) the inequality is showing an increasing trend from lower tail to upper tail of MPCE distribution among all the social groups both in rural and urban areas. In the 50th round the gap in inequality between lower to upper tail of the distribution is highest amongst 'Others' category while it is lowest among STs both in rural and urban areas. In the 61st round in rural areas, the gap is highest among OBCs, while it is lowest among STs. In urban areas, it is highest among STs and lowest among SCs. In the 66th round, the gap in inequality between lower and upper tail of the

distribution is the highest among OBCs and lowest among SCs in rural areas, while it is highest among 'Others' and lowest among SCs in urban areas.

It is evident from Table 79 to 81 that in all the three rounds Atkinson's inequality index is showing an increasing trend from lower tail to upper tail of the distribution both in rural and urban ones among all the social groups. The inequality is highest among 'Others' category both in rural and urban areas in all the three rounds.

Gini index (Tables 79 to 81) reveals that the inequality is higher in urban areas than rural areas in all the three rounds except 61st round (SCs and OBCs) and 66th round (SCs). In rural areas, the lowest inequality of 24 per cent is observed among STs (50th round) and the highest inequality of 36 per cent is observed among OBCs (61st round). In urban areas, the lowest inequality of 26 per cent is observed among STs (50th round) and the highest inequality of 43 per cent is observed among 'Others' (50th round).

7.3.3 Inequality among Christians

Inequality decomposition of social groups among Christians in 50th, 61st and 66th rounds is given in Table 82, 83 and 84 respectively.

Table 82: Inequality decomposition of social groups among Christians (50th Round)

Social groups	Measures (Rural)										
	Percentile ratios				GE			Gini	Atkinson's Indices		
	p90/p10	p90/p50	p10/p50	p75/p25	GE(0)	GE(1)	GE(2)		A(0.5)	A(1)	A(2)
ST	6.06	2.96	0.49	2.60	0.26	0.25	0.31	0.38	0.12	0.23	0.50
SC	3.94	2.30	0.58	2.07	0.16	0.17	0.21	0.32	0.08	0.15	0.27
OBC	--	--	--	--	--	--	--	--	--	--	--
Others	3.14	1.87	0.60	1.80	0.14	0.20	0.80	0.29	0.08	0.13	0.22
Social groups	Measures (Urban)										
	Percentile ratios				GE			Gini	Atkinson's Indices		
	p90/p10	p90/p50	p10/p50	p75/p25	GE(0)	GE(1)	GE(2)		A(0.5)	A(1)	A(2)
ST	3.85	2.09	0.54	1.90	0.19	0.21	0.29	0.33	0.09	0.17	0.28
SC	3.41	2.16	0.63	1.64	0.17	0.20	0.27	0.32	0.09	0.16	0.26
OBC	--	--	--	--	--	--	--	--	--	--	--
Others	4.12	2.39	0.58	2.04	0.23	0.34	2.49	0.37	0.12	0.20	0.32

Note: 1. Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

2. Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

3. Authors calculations using NSSO unit level data of 50th round.

Table 83: Inequality decomposition of social groups among Christians (61st Round)

Social groups	Measures (Rural)										
	Percentile ratios				GE			Gini	Atkinson's Indices		
	p90/p10	p90/p50	p10/p50	p75/p25	GE(0)	GE(1)	GE(2)		A(0.5)	A(1)	A(2)
ST	3.03	1.90	0.63	1.75	0.12	0.13	0.16	0.27	0.06	0.11	0.20
SC	5.31	2.68	0.51	2.10	0.24	0.27	0.39	0.39	0.12	0.21	0.34
OBC	5.04	2.61	0.52	2.13	0.35	0.60	2.98	0.45	0.20	0.30	0.42
Others	5.01	2.55	0.51	2.31	0.28	0.33	0.67	0.40	0.14	0.24	0.53
Social groups	Measures (Urban)										
	Percentile ratios				GE			Gini	Atkinson's Indices		
	p90/p10	p90/p50	p10/p50	p75/p25	GE(0)	GE(1)	GE(2)		A(0.5)	A(1)	A(2)
ST	3.62	2.02	0.56	2.15	0.14	0.15	0.18	0.30	0.07	0.13	0.24
SC	5.70	2.78	0.49	2.55	0.30	0.36	0.62	0.43	0.15	0.26	0.41
OBC	5.21	2.53	0.49	2.50	0.22	0.23	0.31	0.36	0.11	0.20	0.37
Others	7.08	2.63	0.37	2.75	0.30	0.30	0.44	0.41	0.14	0.26	0.47

Note: 1. Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

2. Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

3. Authors calculations using NSSO unit level data of 50th round.

Table 84: Inequality decomposition of social groups among Christians (66th Round)

Social groups	Measures (Rural)										
	Percentile ratios				GE			Gini	Atkinson's Indices		
	p90/p10	p90/p50	p10/p50	p75/p25	GE(0)	GE(1)	GE(2)		A(0.5)	A(1)	A(2)
ST	3.26	1.99	0.61	1.83	0.12	0.13	0.16	0.27	0.06	0.11	0.20
SC	3.81	2.16	0.57	1.93	0.19	0.23	0.40	0.33	0.10	0.17	0.28
OBC	4.15	2.38	0.57	2.09	0.68	1.76	26.97	0.60	0.40	0.49	0.57
Others	5.49	2.40	0.44	2.39	0.59	1.21	12.22	0.57	0.33	0.45	0.56
Social groups	Measures (Urban)										
	ST	4.01	1.95	0.49	2.13	0.14	0.14	0.18	0.29	0.07	0.13
SC	5.79	2.61	0.45	2.67	0.21	0.20	0.24	0.35	0.10	0.19	0.33
OBC	5.87	2.41	0.41	2.57	0.23	0.24	0.30	0.37	0.11	0.21	0.36
Others	4.76	2.09	0.44	2.23	0.26	0.38	1.45	0.38	0.14	0.23	0.37

Note: 1. Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

2. Atkinson indices, A(e), where e > 0 is the inequality aversion parameter

3. Authors calculations using NSSO unit level data of 50th round.

In the percentile ratio of 50th round, MPCE of the people that is higher than the 90 per cent per cent per cent of the population is 6.06 times the MPCE of the people that is higher than the bottom 10% of the population in rural areas among STs while it is 4.12 times higher among Others in urban areas. In other ratios too (p90/p50 and p75/p25) it is highest among STs in rural areas and highest among 'Others' in urban areas. The ratio p10/p50 is highest among 'Others' in rural areas and SCs in urban areas.

In the percentile ratio of 61st round, the MPCE of highest spending people is 5.31 times the MPCE of lowest spending people among others in urban areas. In the ratio p90/p50, it is highest among SCs and lowest among STs in both rural and urban areas. In the ratio p75/p25, it is highest among 'Others' and lowest among STs in both rural and urban areas. The ratio p10/p50 is highest STs both in rural and urban areas while it is lowest among SC/Others in rural areas and 'Others' in urban areas.

In the 66th round, the percentile ratio (p90/p10) is highest among 'Others' in rural areas and OBCs in urban areas, while it is lowest among STs in rural areas and STs in urban areas. In other ratios too (p90/p50 and p75/p25), it is highest among 'Others' in rural areas and SCs in urban areas, while it is lowest among STs both in rural and urban areas. The ratio p10/p50 is the highest among STs both in rural and urban areas while it is lowest among 'Others' in rural areas and OBCs in urban areas.

The Tables 82, 83 and 84 reveal that the Generalized Entropy index shows increasing trend in inequality from lower tail to upper tail of MPCE distribution among all the social groups both in rural and urban areas in all the three rounds. In the 50th round the gap in inequality between lower to upper tail of the distribution is highest amongst 'Others' category while it is lowest among SCs both in rural and urban areas. In the 61st round in rural areas, the gap is highest among OBCs, while it is lowest among STs. In urban areas, it is highest among SCs and lowest among STs. In the 66th round, the gap in inequality between lower and upper tail of the distribution is the highest among OBCs and lowest among STs in rural areas, while it is highest among 'Others' and lowest among STs in urban areas.

The Atkinson's inequality index shows an increasing trend from lower tail to upper tail of the distribution both in rural and urban among all the social groups in all the rounds. The inequality is highest among 'Others' category both in rural and urban areas in the entire round except OBC in rural areas and 'Others' in urban areas in 66th round.

Gini index (Tables 82 to 84) reveals that the inequality is higher in urban areas than rural areas in all the three rounds except 61st round (OBCs) and 66th round (OBC and Others). In rural areas, the lowest inequality of 27 per cent is observed among STs

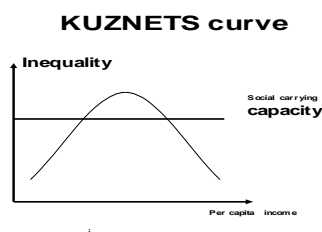
(61st and 66th round) and the highest inequality of 60 per cent is observed among OBCs (66th round). In urban areas, the lowest inequality of 29 per cent is observed among STs (66th round) and the highest inequality of 43 per cent is observed among SCs (61st round).

7.3.4 Kuznets Curve

Simon Kuznets predicted that as an economy develops inequality will rise and then, at a certain stage of development naturally begin to fall back again (Das, Sinha, and Mitra 2014)

The decomposition analysis of MPCE can be compared with a Kuznets curve to study the expenditure inequality in India. A Kuznets curve is a graph with measures of increased economic development (presumed to correlate with time) on the horizontal axis, and measures of income inequality on the vertical axis. Kuznets (1955) argued that this curve would have an inverted-U-shape. That is, Kuznets made the proposition when an economy is primarily agricultural it has a low level of income inequality. During early industrialization income inequality increases and then at some critical point it starts to decrease over time.

Figure 12: Kuznets Curve



Our inequality decomposition analysis (Table 82 to 90) shows an increasing trend in inequality from lower tail to upper tail of MPCE distribution based on generalized entropy index and Atkinson's index in all the three rounds. This means that as the

expenditure level increases the inequality is found to be increasing, which indicates that Indian economy is still an emerging economy and it is yet to reach the half way of the Kuznets curve. Once the MPCE reaches the top of the curve, then the inequality in MPCE may start declining. India is yet to reach this stage.

7.4 Rural Household Expenditure – total expenditure and food proportion

We now examine the trend in expenditure on food items within total expenditure in rural areas during 50th, 61st and 66th rounds across three religions viz. Hindu, Islam and Christianity and four social groups (See Table 85). Among Hindus, the highest expenditure on food but the lowest food expenditure proportion is observed among “others” followed by OBC, SC and ST, across the 3 rounds. However, among Islam, lowest food proportion expenditure is seen among OBC followed by ST, Others and SC. Similarly among Christianity, highest expenditure but lowest expenditure proportion on food is seen among “Others” followed by OBC, ST and SC across the 3 rounds.

Table 85: Rural Household expenditure proportion on food by social groups and religion at constant prices. (Figures in parentheses are standard deviations)

Religion/Social Groups	50 th Round 1993-94		61 st Round 2004-05		66 th Round 2009-10	
	Total Exp.	Food (Per cent)	Total Exp.	Food (Per cent)	Total Exp.	Food (per cent)
Hindu	655.47	68.80	1486.63	65.75	1883.70	72.19
	(863.78)	(12.21)	(2163.01)	(12.87)	(1356.24)	(14.48)
SC	675.83	68.11	1641.20	63.64	1950.16	70.49
	(522.55)	(12.65)	(2969.41)	(12.59)	(1632.60)	(14.43)
OBC	--	-	1969.42	61.26	2391.26	67.47
			(2392.87)	(13.36)	(4362.23)	(15.02)
Others	992.44	66.41	2503.74	59.35	2977.32	63.94
	(999.56)	(13.41)	(5069.41)	(13.61)	(4748.27)	(15.86)
Islam						
ST	1317.66	67.26	3226.24	60.48	2815.60	67.79
	(1125.77)	(13.57)	(3352.33)	(14.98)	(1560.87)	(14.06)
SC	1058.61	68.30	1587.76	67.02	1985.82	71.75
	(940.49)	(13.61)	(945.71)	(11.32)	1228.55	(16.33)
OBC	--	-	2466.65	60.02	2638.94	66.06
			(3692.36)	(13.74)	(2085.15)	(15.58)
Others	898	70.03	2154.55	64.36	2444.53	69.89
	(1048.9)	(12.47)	(1896.13)	(12.85)	(2592.86)	(14.45)
Christianity						
ST	1029.94	68.07	2503.11	62.35	2745.59	65.29
	(833.59)	(11.78)	(1567.37)	(12.84)	(1611.69)	(14.91)
SC	583.96	70.77	1593.57	62.65	2271.19	67.5
	(316.64)	(12.73)	(1281.91)	(12.90)	(1841.02)	(16.84)
OBC	--	-	2582.39	58.02	4694.16	62.49
			(5226.53)	(15.14)	(34948.08)	(16.1)
Others	1105.99	65.07	3236.15	55.00	5118.78	55.62
	(1022.37)	(13.99)	(3586.63)	(15.68)	(22314.98)	(17.25)

(Authors calculations using NSSO unit level data)

We next examine the trend in food expenditure in total among urban households.

7.5 Urban Household Expenditure – total expenditure and food proportion

We find the proportion of expenditure on food items in total expenditure in urban areas during 50th, 61st and 66th rounds across different religions viz. Hindu, Islam and Christianity and social groups (table 85). Evidently, among the Hindus, highest expenditure and lowest food expenditure proportion is observed among “Others” followed by OBC, ST and SC. However, among Islam, lowest food proportion expenditure is seen among SC followed by Others, OBC and ST. We find that households who follow Christianity had the lowest expenditure proportion on food by “Others” followed by OBC, ST and SC across the three rounds.

Table 86: Urban Household I expenditure proportion on food by social groups and religion at constant prices. (Figures in parentheses are standard deviations)

Religion/Social Groups	50 th Round (1993-94)		61 st Round (2004-05)		66 th Round (2009-10)	
	Total Exp.	Food (Per cent)	Total Exp.	Food (Per cent)	Total Exp.	Food (Per cent)
Hindu	903.95	63.24	1969.10	53.98	2753.45	57.47
	(725.61)	(13.85)	(1526.08)	(14.53)	(2378.59)	(15.69)
ST	915.87	63.06	2088.64	53.33	2704.15	59.02
	(850.37)	(14.01)	(1707.33)	(13.16)	(2434.05)	(15.01)
SC	-	-	2383.80	49.89	3037.50	54.75
	-	-	(3216.30)	(13.18)	(4299.89)	(14.79)
OBC	1346.69	58.86	3603.45	44.2	4383.00	48.78
	(1355.47)	(14.50)	(4927.14)	(13.95)	(7253.56)	(14.84)
Islam						
ST	1616.32	69.59	5015.81	57.45	5545.31	59.48
	(1364.03)	(13.31)	(8292.73)	(14.05)	(5348.00)	(17.1)
SC	968.65	69.92	1876.78	51.95	3294.44	56.19
	(1002)	(13.84)	(1185.89)	(13.45)	(1540.54)	(10.86)
OBC	-	-	2462.22	52.72	3078.84	58.71
	-	-	(2177.68)	(12.85)	(3199.06)	(14.92)
Others	1137.5	64.54	2734.02	52.08	3459.20	56.99
	(1815.67)	(13.58)	(2419.30)	(13.54)	(7692.03)	(14.17)
Christianity						
ST	1426.6	57.90	3681.52	50.57	3641.66	54.9

	(786.07)	(11.85)	(2241.52)	(11.89)	(2097.74)	(13.19)
SC	1049.66	61.94	2463.00	49.50	3058.04	55.75
	(749.97)	(4.26)	(2620.48)	(15.49)	(2415.42)	(14.95)
OBC		-	2768.56	48.81	3539.33	51.59
			(2314.34)	(15.32)	(2665.74)	(15.28)
Others	1514.31	57.20	4044.04	42.65	4631.75	47.04
	(1396.89)	(16.00)	(3554.38)	(14.84)	(9587.52)	(14.41)

(Authors calculations using NSSO unit level data)

7.6 A Model of Consumption Expenditure

In order to better understand the determinants of expenditure in the households we use an econometric model. We postulate that expenditure is a function of household size, sex of the household, his/her age, marital status, level of education, the sector in which the household was located (Rural 1, Urban 0) and the social groups within each religion.

The idea is to check, what are the characteristics of a household that determine its expenditure patterns?

Total Expenditure = f [Household Demographic Characteristics, Social Characteristics]

In order to test whether these factors have any impact on expenditure we set up a linear regression model. (See equation 12)

Total expenditure is derived by multiplying the MPCE by the household size. NSSO data sets have information of Household Size, Education, Sex, Age and Marital Status of the household head, urban sector, religion and social groups (Table 87) Further, there is information on religion and social groups. In the regression model

we interacted religion with social groups to see the simultaneous impact of group and religion on consumption expenditure.

We first present the survey statistics of the variables used in our regression analysis.

Table 87: Description of Variables

Variable	Mean	SD	Min.	Max.
HH Size	6.23	3.18	1	64
Sex	1.48	0.5	1	2
Age	25.55	18.74	0	99
Marital status	1.56	0.6	1	8
Education	4.29	3.26	0	13
Urban	0.37	4.8	0	1
Hindu	0.78	0.41	0	1
General	0.73	0.44	0	1
SC	0.15	0.36	0	1
Urban-Hindu	0.27	0.45	0	1
Urban-Hindu-General	0.23	0.42	0	1
Islam	0.12	0.32	0	1
Urban-Islam	0.06	0.23	0	1
Urban-Islam-General	0.05	0.22	0	1
Christianity	0.05	0.22	0	1
Urban-Christianity	0.02	0.14	0	1
Urban-Christianity-General	0.01	0.09	0	1
Variable	Mean	SD	Min.	Max.
HH Size	6.19	3.09	1	43
Sex	1.49	0.5	1	2
Age	26.85	19	0	660
Marital status	1.56	0.6	1	4
Education	3.64	2.47	1	11
Urban	0.34	0.47	0	1
Hindu	0.75	0.43	0	1
General	0.33	0.47	0	1
SC	0.16	0.37	0	1
ST	0.13	0.34	0	1
OBC	0.38	0.48	0	1
Urban-Hindu	0.25	0.43	0	1
Urban-Hindu-General	0.09	0.49	0	1
Islam	0.13	0.34	0	1
Urban-Islam	0.06	0.23	0	1
Urban-Islam-General	0.03	0.18	0	1
Christianity	0.003	0.25	0	1
Urban-Christianity	0.02	0.15	0	1
Urban-Christianity-General	0.003	0.06	0	1
Variable	Mean	SD	Min.	Max.

HH Size	5.82	2.84	1	35
Sex	1.49	0.5	1	2
Age	28.17	19	0	120
Marital status	1.58	0.59	1	4
Education	5.61	3.41	1	13
Urban	0.39	0.49	0	1
Hindu	0.74	0.44	0	1
General	0.32	0.47	0	1
SC	0.16	0.37	0	1
ST	0.14	0.34	0	1
OBC	0.38	0.44	0	1
Urban-Hindu	0.28	0.45	0	1
Urban-Hindu-General	0.11	0.31	0	1
Islam	0.14	0.35	0	1
Urban-Islam	0.07	0.25	0	1
Urban-Islam-General	0.06	0.18	0	1
Christianity	0.07	0.25	0	1
Urban-Christianity	0.03	0.16	0	1
Urban-Christianity-General	0.004	0.06	0	1

(Authors calculations using NSSO unit level data)

$$\text{Total Expenditure (Y)} = \beta_0 + \beta_1 \text{ Household size} + \beta_2 \text{ Sex} + \beta_3 \text{ Age} + \beta_4 \text{ Marital Status} + \beta_5 \text{ Education} + \beta_6 \text{ Sector} + \beta_7 \text{ Religion} + \beta_8 \text{ Social group} + \beta_9 (\text{Social groups X Religion}) \dots \dots \dots (12)$$

In the above model sector elements urban and rural are taken as dummy variables as 0 and 1. The parameters Hindu, “Others” (general), SC, ST, urban Hindu and urban Hindu “Others” (general) are also considered as dummy variable as 1. All the remaining dummy variables have been taken as Zero.

The null hypothesis that we test for is that consumption expenditure depends only on household characteristics but not on religion and social groups. The regressions have been run separately for each round, 50th, 61st and 66th. The regression results are given in Table 88 (50th round), Table 89 (61st round) and Table 90 (66th round).

We run 3 different variants of the consumption models. In the first model, we kept only the Hindu religion Households, in the second the Islam Households and in the third are checked for Christian Household.

Regression results - 50th Round

We found that in the 50th round, HH Size, Sex (Male), Age, Education and Urban are all positive and significant while Marital Status is negative and significant. Among the groups, in the 50th round there were only 3 categories, SC, ST and General (“Others”). We use ST as the base group and therefore only include SC and General in the regression. General is positive and SC is negative suggesting that consumption expenditure is greater for General but lower of SC when compared to that of ST households, while the coefficient of Hindu is negative and significant, that of Hindu Urban General is positive and significant and of greater absolute value.

When we look at the results of Islam, we find that HH Size, Sex (Male), Age, Education and Urban are all positive and significant while Marital Status is negative and significant. General is positive and SC is negative suggesting that consumption expenditure is greater for General but lower of SC when compared to that of ST households, while the coefficient of Islam is negative and significant, that of Urban Islam General is also negative and significant and of greater absolute value.

When we look at the results of Christianity, we find that HH Size, Sex (Male), Age, Education and Urban are all positive and significant while Marital Status is negative and significant. General is positive and SC is negative suggesting that consumption expenditure is greater for General but lower of SC when compared to that of ST households, while the coefficient of Christianity is negative and significant, that of

Urban Christianity General is also negative and significant and of greater absolute value.

Table 88: Total Consumption expenditure - 50th Round.

Independent Variables	Dependent variable: Total consumption Expenditure		
HH Size	287.6*** (271.99)	289.7*** (273.89)	287.4*** (272.36)
Sex	157.9*** (23.04)	154.2*** (22.51)	155.8*** (22.72)
Age	7.374*** (25.83)	7.211*** (25.25)	7.337*** (25.68)
Marital Status	-93.69*** (10.62)	-98.84*** (-11.21)	-94.82*** (-10.74)
Education	132.5*** (120.65)	128.8*** (116.57)	131.1*** (119.11)
Urban	296.3*** (20.50)	546.9*** (70.04)	484.2*** (65.16)
Hindu	-273.2*** (25.47)	-----	-----
General	104.3*** (9.48)	141.2*** (13.08)	206.0*** (17.26)
SC	-175.4*** (12.96)	-283.7*** (-21.91)	-171.2*** (-12.27)
Urban-Hindu	10.05 (0.44)	-----	-----
Urban Hindu General	287.2*** (14.87)	-----	-----
Islam	-----	-174.6*** (-12.03)	-----
Urban-Islam	-----	492.4*** (8.40)	-----
Urban-Islam general	-----	-806.7*** (-13.86)	-----
Christianity	-----	-----	367.0*** (18.03)
Urban Christianity	-----	-----	53.42 (1.51)
Urban Christianity general	-----	-----	-129.5** (-2.71)
Constant	-467.6*** (23.73)	-659.8*** (-35.82)	-763.8*** (-40.07)
Adjusted R Squared	0.1545	0.1549	0.1540

N = 564537, Prob > F= 0.0000 (t statistics in parentheses. p<0.05, ** p<0.01, ***

p<0.001)

Regression results– 61st Round

We found that in the 61st round, HH Size, Sex (Male), Age, Education and Urban are all positive and significant while Marital Status is negative and significant. Among the groups, we use ST as the base group and therefore only include SC, OBC and General in the regression. General is positive and both SC and OBC are negative suggesting that consumption expenditure is greater for General but lower of SC and OBC, while the coefficient of Hindu is negative and significant, that of Hindu Urban General is positive and significant and of greater absolute value.

When we look at the results of Islam, we find that in the 61st round, HH Size, Sex (Male), Age, Education and Urban are all positive and significant while Marital Status is negative and significant. General is positive while SC and OBC are negative suggesting that consumption expenditure is greater for General but lower of SC and OBC when compared to that of ST households, while the coefficient of Islam is negative and significant, that of Islam Urban General is negative and significant and of greater absolute value.

When we look at the results of Christianity, we find that HH Size, Sex (Male), Age, Education and Urban are all positive and significant while Marital Status is negative and significant. General and OBC are positive and SC is negative suggesting that consumption expenditure is greater for General followed by OBC but lower of SC HH when compared to that of ST households, while the coefficient of Christianity is negative and significant, that of Urban Christianity General is also negative and significant and of greater absolute value.

Table 89: Total Consumption expenditure– 61st Round.

Independent Variables	Dependent variable: Total consumption Expenditure		
HH Size	1060.8*** (235.12)	1072.8*** (237.02)	1065.1*** (236.23)
Sex	616.7*** (21.76)	614.6*** (21.66)	607.0*** (21.39)
Age	37.92*** (31.44)	37.51*** (31.05)	37.37*** (30.93)
Marital Status	-598.4*** (-15.71)	-637.6*** (-16.73)	-595.3*** (-15.61)
Education	750.0*** (126.94)	739.4*** (124.36)	748.1*** (126.45)
Urban	2194.3*** (38.41)	2876.5*** (88.30)	2543.6*** (82.21)
Hindu	-1181.1*** (-28.63)	-----	
General	1059.5*** (22.34)	1823.7*** (38.98)	2250.4*** (43.72)
SC	-633.4*** (-11.86)	-1305.2*** (-25.54)	-521.4*** (-9.23)
OBC	-59.49 (-1.30)	-550.0*** (-12.44)	142.2** (2.84)
Urban-Hindu	-436.7*** (-6.19)	-----	-----
Urban Hindu General	2950.1*** (43.89)	-----	-----
Islam	-----	-702.3*** (-12.93)	-----
Urban-Islam	-----	-18.63 (-0.17)	-----
Urban-Islam general	-----	-1932.5*** (-15.89)	-----

Christianity	-----	-----	1602.6*** (21.57)
Urban Christianity	-----	-----	1387.8*** (11.19)
Urban Christianity general	-----	-----	-305.4 (-1.17)
Constant	-1547.8*** (-19.51)	-2246.0*** (-29.56)	-2989.4*** (-37.55)
Adjusted R Squared	0.1359	0.1339	0.1339

N = 608413, Prob > F = 0.0000 (t statistics in parentheses. p<0.05, ** p<0.01, ***

p<0.001)

Regression results - 66th Round

We found that in the 66th round, HH Size, Sex (Male), Age, Education and Urban are all positive and significant while Marital Status is negative and significant. Among the groups, we use ST as the base group and therefore only include SC, OBC and General in the regression. General and OBC are positive and SC is negative suggesting that consumption expenditure is greater for General HH followed by OBC HH but lower of SC HH when compared to that of ST households. OBC and Urban-Hindu are not significant. While the coefficient of Hindu is negative and significant, that of Urban Hindu General is positive and significant and of greater absolute value.

When we look at the results of Islam, we find that in the 66th round, HH Size, Sex (Male), Age, Education and Urban are all positive and significant while Marital Status is negative and significant. We use ST as the base group and therefore only include SC, OBC and General in the regression. General is positive and both SC and OBC are negative suggesting that consumption expenditure is greater for General HH but lower of SC HH and OBC HH when compared to that of ST households. While the coefficient of Islam and Urban Islam General are negative and significant but Urban Islam is positive.

When we look at the results of Christianity, we find that HH Size, Sex (Male), Age, Education and Urban are all positive and significant while Marital Status is negative and significant. General and OBC are positive and SC is negative suggesting that consumption expenditure is greater for General HH followed by OBC HH but lower of SC HH when compared to that of ST households, while the coefficient of Christianity and Urban Christianity General are positive, that of Urban Christianity is negative and not significant. However, Both Urban Christianity and Urban Christianity general are not significant.

Table 90: Total Consumption expenditure– 66th Round.

Independent Variables	Dependent variable: Total consumption Expenditure		
HH Size	1601.7*** (113.40)	1628.6*** (114.92)	1610.4*** (114.20)
Sex	959.8*** (11.71)	945.7*** (11.54)	940.3*** (11.47)
Age	79.33*** (21.20)	78.59*** (21.00)	77.85*** (20.78)
Marital Status	-1121.5*** (-9.37)	-1192.6*** (-9.97)	-1089.2*** (-9.10)
Education	815.9*** (64.79)	792.6*** (62.66)	810.9*** (64.34)
Urban	3531.4*** (22.47)	4782.1*** (52.31)	4561.0*** (52.26)
Hindu	-1714.5*** (-13.89)	-----	-----
General	2864.5*** (20.69)	4282.5*** (32.00)	4732.9*** (31.50)
SC	-1292.9*** (-8.27)	-2216.0*** (-14.91)	-975.8*** (-5.87)
OBC	225.3 (1.70)	-307.6* (-2.41)	666.1*** (4.54)
Urban-Hindu	4.271 (0.02)	-----	-----
Urban Hindu General	3915.8*** (21.06)	-----	-----
Islam	-----	-2183.8*** (-13.69)	-----
Urban-Islam	-----	796.0** (2.73)	-----
Urban-Islam general	-----	-3072.9*** (-9.44)	-----
Christianity	-----	-----	3058.4*** (14.31)
Urban Christianity	-----	-----	-374.0 (-1.14)
Urban Christianity general	-----	-----	1346.9* (2.04)
Constant	-1939.6*** (-8.07)	-2881.7*** (-12.50)	-4219.4***(-17.44)
Adjusted R Squared	0.0630	0.0630	0.0623

N = 381465, Prob > F = 0.0000 (t statistics in parentheses. p<0.05, ** p<0.01, ***

p<0.001)

7.7 Conclusion

Our discussion in this chapter suggests that the level of consumption inequality in India has declined marginally over the years both in rural and urban areas. Further, difference in inequality between rural and urban areas is also marginal.

Percentile ratio reveals that MPCE of the people that is higher than the 90 per cent of the population is more than 3 times the MPCE of the people that is higher than the bottom 10 per cent of the population in all the three rounds both in rural and urban areas in all the three religions under study. In other words we may say that highest spending people spend three times more than the lowest spending people. Both, the Generalized Entropy index and Atkinson's index shows increasing trend in inequality from lower tail to upper tail of MPCE distribution among all the social groups both in rural and urban areas in all the three rounds in all the three religions. Gini index reveals marginal variation in inequality between rural and urban areas among all the social groups in all the three religions. A comparison of decomposition analysis of MPCE with Kuznets curve reveals that as the expenditure level increases the inequality is found to be increasing, which indicates that Indian economy is still an emerging economy and it is yet to reach the half way of the Kuznets curve. Once the MPCE reaches the top of the curve, then the inequality in MPCE may start declining. India is yet to reach this stage.

As regards proportion of food expenditure in the total expenditure, in rural areas, among Hindus, the highest expenditure on food but the lowest food expenditure proportion is observed among "others" followed by OBC, SC and ST, across the 3 rounds. However, among Islam, lowest food proportion expenditure is seen among OBC followed by ST, Others and SC. Similarly among Christianity, highest

expenditure but lowest expenditure proportion on food is seen among “Others” followed by OBC, ST and SC across the 3 rounds. In urban areas, among the Hindus, highest expenditure and lowest food expenditure proportion is observed among “Others” followed by OBC, ST and SC. However, among Islam, lowest food proportion expenditure is seen among SC followed by Others, OBC and ST. We find that households who follow Christianity had the lowest expenditure proportion on food by “Others” followed by OBC, ST and SC across the three rounds.

Regression analysis reveals that in the 50th round consumption expenditure is greater for General but lower of SC when compared to that of ST households in all the three religions. In the 61st round, among Hindus and Islam, General is positive and both SC and OBC are negative suggesting that consumption expenditure is greater for General but lower of SC and OBC. However, in the 66th round, General and OBC are positive and SC is negative suggesting that consumption expenditure is greater for General followed by OBC but lower of SC when compared to that of ST households.

The next chapter is dedicated to the analysis of consumption, inequality and poverty in Goa wherein we discuss the consumption pattern of major food and non-food items and compare the changes in poverty and inequality in four rounds of NSSO data.

Chapter 8

Consumption, inequality and poverty in Goa

8.1 Introduction

This chapter deviates from the earlier chapter a bit in the sense that we present a discussion of a single small state – Goa. There are two reasons for choosing this state:

- a) It is the highest per capita income state in India with high levels of social development indicators and
- b) To fill a gap in the literature as there are no existing studies on trends in consumption expenditure of Goa.

An attempt is made in this chapter to study consumption, poverty and inequality in Goa in rural and urban areas using unit level data of NSSO for the four rounds i.e., 50th (1993-94), 55th (1999-2000), 61st (2004-05) and 66th (2009-10).

8.2 Data Source

Goa's data has been extracted from the unit level data of NSSO for the four rounds using the state code given by the supported documents of four NSSO rounds.

8.3 Objectives

This chapter attempts to

1. Analyse the consumption pattern of major food and non-food items in Goa.
2. Compare the changes in poverty and inequality in four rounds of NSSO in the state.

8.4 Methodology

This chapter relies on NSSO raw household data. The MPCE and consumption of major food and non-food items are generated by extracting the unit level data (raw data) from NSSO, with respect to the four quinquennial rounds viz, 50th, 55th, 61st and 66th rounds. We use Gini coefficient to calculate inequality.

8.5 Distribution of households according MPCE class

The distribution of households in different ranges of MPCE in 50th, 55th, 61st and 66th rounds is given in Table 91. The monthly per capita range is in current prices of respective rounds. There has been a significant increase in the MPCE from 50th round to 66th round. The proportion of household in the MPCE range of Rs.1000-4999.99 has increased from 9.59 per cent in the 50th round to 88.77 per cent in the 66th round. It may also be noted that in the 66th round there were no households with MPCE of less than Rs. 400/-

Table 91: Distribution of household according MPCE (Per cent)

MPCE (in Rs.)	50 th Round		55 th Round		61 st Round		66 th Round	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
0-199.99	4.79	1.88	0	0	0	0	0	0
200-399.99	36.30	26.29	2.60	1.76	6.25	4.20	0	0
400-599.99	30.14	32.39	20.31	8.10	20.00	13.45	0.63	1.05
600-799.99	13.01	15.97	17.19	17.96	16.88	15.13	3.14	3.86
800-999.99	6.17	9.39	17.71	12.68	16.87	16.80	6.92	3.16
1000-4999.99	9.59	14.08	42.19	59.15	40.00	48.74	86.79	88.77
5000-Above	0	0	0	0.35	0	1.68	2.52	3.16
Total	100	100	100	100	100	100	100	100

(Source: Author's calculation using unit level data of NSSO)

8.6 MPCE & Poverty

The poverty line fixed by the Planning Commission for Goa for the year 2009-10 is Rs. 931 in rural area and Rs. 1025 in urban area. If this poverty line is applied to the MPCE class in Table 91 we can say that during the latest quinquennial round (66th Round i.e. 2009-10), the poverty in Goa works out 10.79 per cent in rural area and 8.07 per cent in urban area. These poverty estimates is close to the official estimates of 11.5 per cent and 6.9 per cent released by the Planning Commission using Tendulkar Methodology for rural and urban areas respectively. The irregular trend observed in poverty rates may be either attributable to methodological problems in poverty estimation or sampling errors casting doubts on the reliability of sample itself. Therefore, whether poverty in Goa is a myth or reality is a matter to be probed further by the researchers.

8.7 MPCE in Goa

As discussed earlier, in consumer expenditure surveys information is normally collected on quantity and value of household consumption in the 'last 30 days' for

most items of consumption (including all food items) and 'last 365 days' for some less frequently purchased items.

It may be seen from Tables 92 and 93 that the total MPCE on food items was marginally higher in urban areas than rural areas both in 50th and 66th round. However, in case of non food items, the MPCE in rural areas was higher than urban areas in both the rounds. It may also be noted that the MPCE, taking both food and non-food items together, was higher in rural areas than urban areas during the rounds under consideration. It may be noted that in case of food items the MPCE in real terms has increased from Rs.181.56 in 50th round to Rs.193.98 in 66th round registering a growth of 7 per cent, while in urban areas too it has increased from Rs.184.12 to Rs.199.45 registering a growth of 8 per cent. In spite of this increase, the proportion of expenditure on food in the total MPCE has reduced from 56 per cent to 18 per cent in rural and 58 per cent to 19 per cent in urban sectors.

In case of non-food items, the MPCE in real terms has increased significantly from Rs.145.02 in 50th round Rs.910.17 in 66th round in rural areas registering a growth of 528 per cent, while it has increased from Rs.136.80 to Rs.835.29 in urban areas registering a growth of 511 per cent. The proportion of expenditure on non-food items in the total MPCE has gone up considerably from 44 per cent to 82 per cent in rural and 43 per cent to 81 per cent in urban sectors.

Total MPCE at constant prices from 50th round to 66th round has increased from Rs.326.57 to Rs.1104.15 registering a growth of 238 per cent in rural areas, while in urban areas it has increased from Rs.320.92 to Rs.1034.74 registering a growth of 223 per cent. The trend in MPCE in major items of consumption at constant prices is given below.

1. Major Food items

Cereals: Cereals are a staple food of Goa. At constant prices the consumption of cereals has declined from 50th round to 66th round both in rural and urban areas. In rural areas it has declined from Rs.39.88 to Rs.38.87 registering a decline of 2.53 per cent. In urban areas it has declined from Rs.40.25 to Rs.39.26 registering a decline of 2.46 per cent. However, it is important to note that the proportion expenditure on cereals is declined drastically from 12 per cent in 50th round to 4 per cent in 66th round in rural areas. Similarly, in urban areas it has declined from 13 per cent to 4 per cent.

Pulses: The value of consumption of pulses has increased from Rs. 6.85 in 50th round to Rs.11.18 in 66th round registering a growth of 63 per cent in rural areas. In urban areas, it has increased from Rs. 7.09 to Rs. 12.13 registering a growth of 71.09 per cent during the same period. In spite this increase, the proportion of expenditure in the total MPCE has declined from 2 per cent to 1 per cent. Similarly, in urban areas it has declined from 2 per cent to 1 per cent.

Milk and Milk Products: Milk and milk products are considered as luxury for the greater part of rural population in India. It may be seen that the MPCE on this item in rural areas has increased from Rs. 19.20 in 50th round to Rs.27.23 registering growth of 42 per cent and in urban areas it has increased from Rs. 21.57 to Rs. 28.08 registering a growth of 30 per cent. In this item too, the proportion of expenditure in the total MPCE has declined from 6 per cent to 2 per cent. Similarly, in urban areas it has declined from 6.72 per cent to 2.71 per cent.

Edible Oil: The value of consumption of edible oil has declined in real terms from Rs.9.90 in 50th round Rs.8.60 in 66th round registering a decline of 13 per cent in

rural areas. In urban areas too, it has declined from Rs.9.40 to Rs.9.10 registering a decline of -3.70 per cent. The proportion of expenditure in the total MPCE has declined from 2 per cent to 1 per cent. Similarly, in urban areas it has declined from 3 per cent to 1 per cent.

Egg, Fish and Meat: The MPCE on Egg, fish and meat has increased in real terms from Rs.31.82 in 50th round to Rs.35.83 in 66th round registering a growth of 12.6 per cent in rural areas, while it has increased from Rs.30.90 to Rs.36.08 registering a growth of 17 per cent in urban areas. However, the proportion of expenditure in the total MPCE has declined from 9.74 per cent to 3.26 per cent. A similar decline is seen in urban areas.

Vegetables: The value of consumption of vegetables in real terms has increased from Rs.12.00 in 50th round Rs.16.65 in 66th round in rural areas registering a growth of 39 per cent while it has increased from Rs.12.26 to Rs.15.36 in urban areas registering a growth of 25 per cent. The proportion of expenditure on this item in the total MPCE has declined from 4 per cent to 2 per cent in rural areas, while it has declined from 4 per cent to 1 per cent in urban areas.

Fruits (Fresh): The MPCE on Fruits (fresh) in real terms has declined from Rs. 24.86 in 50th round to Rs. 17.76 in 66th round in rural areas registering a decline of 29 per cent while in urban areas it has declined from Rs. 19.67 to Rs. 18.89 registering a decline of 4 per cent. The proportion of expenditure on this item in the total MPCE has also declined from 8 per cent to 2 per cent in rural areas and 6 per cent to 2 per cent in urban areas.

2. Major Non-food items

Tobacco: The MPCE on Tobacco has increased in real terms from Rs.4.48 in 50th round to Rs.5.06 in 66th round registering a growth of 13 per cent in rural areas, while it has increased from Rs.4.44 to Rs.7.41 registering a growth of 67 per cent in urban areas. However, the proportion of expenditure in the total MPCE has declined from 1 per cent to 0.5 per cent. Similarly, in urban areas it has declined from 1.4 per cent to 0.7 per cent.

Intoxicants: The value of consumption of intoxicants in real terms has declined from Rs.10.22 in 50th round to Rs. 6.88 in 66th round in rural areas registering a decline of 33 per cent. However, in urban areas, it has increased from Rs.7.51 to Rs.13.07 registering a high growth of 74 per cent. The proportion of expenditure in the total MPCE has declined from 3 per cent to 1 per cent. Similarly, in urban areas it has declined from 2 per cent to 1 per cent.

Fuel and Light: The value of consumption of fuel & light in real terms has increased from Rs.19.68 in 50th round to Rs.28.74 in 66th round in rural areas registering a growth of 46 per cent. In urban areas, it has increased from Rs.18.03 to Rs.30.82 registering a high growth of 71 per cent. The proportion of expenditure in the total MPCE has declined from 6 per cent to 3 per cent in rural areas. Similarly, in urban areas it has declined from 5 per cent to 3 per cent.

Clothing: The MPCE on Clothing in real terms has increased from Rs. 24.09 in 50th round to Rs. 43.57 in 66th round in rural areas registering a growth of 81 per cent and in urban areas it has increased from Rs. 12.05 to Rs. 50.84 registering a very high growth of 322 per cent. The proportion of expenditure on this item in the total

MPCE has also declined from 7 per cent to 4 per cent in rural areas. However it has increased from 4 per cent to 5 per cent in urban areas.

Footwear: The value of consumption of footwear in real terms has increased from Rs.2.68 in 50th round to Rs.17.41 in 66th round in rural areas registering a high growth of 550 per cent. In urban areas, it has increased from Rs.2.24 to Rs.17.69 registering a high growth of 690 per cent. The proportion of expenditure in the total MPCE has increased from 1 per cent to 2 per cent in rural areas. Similarly, in urban areas it has remained constant at 0.7 per cent.

Rent: The value of rent in real terms has increased from Rs.1.40 in 50th round to Rs.21.15 in 66th round in rural areas registering a growth of 1411 per cent. In urban areas also it has increased from Rs.12.99 to Rs.59.19 registering a growth of 356 per cent. The proportion of expenditure in the total MPCE has increased from 0.43 per cent to 1.92 per cent in rural areas. Similarly, in urban areas it has increased from 4 per cent to 6 per cent.

Education: The MPCE on Education in real terms has declined from Rs. 21.61 in 50th round to Rs. 9.56 in 66th round in rural areas registering a decline of 56 per cent while in urban areas it has declined from Rs. 18.25 to Rs. 16.15 registering a decline of 12 per cent. The proportion of expenditure on this item in the total MPCE has also declined from 7 per cent to 6 per cent in rural areas. However it has increased from 0.9 per cent to 1.6 per cent in urban areas.

Table 92: MPCE (Rural) at Constant Prices (Rs.)

Major Items	50 th R	55 th R	61 st R	66 th R
Cereals	39.88	49.29	41.75	38.87
Pulses & their products	6.85	6.59	3.24	11.18
Milk & milk products	19.20	24.75	21.05	27.23
Edible oil	9.90	8.12	10.02	8.60
Egg, fish & meat	31.82	30.78	34.14	35.83
Vegetables	12.00	13.41	11.91	16.65
Fruits (fresh)	24.86	19.63	18.59	17.76
Food total	181.56	194.72	180.18	193.98
Tobacco	4.48	11.13	6.74	5.06
Intoxicants	10.22	22.52	15.63	6.88
Fuel & light	19.68	21.02	33.13	28.74
Clothing	24.09	17.24	57.47	43.57
Education	21.61	9.54	43.96	9.56
Total non-food	145.02	237.92	545.09	910.17
Total expenditure	326.57	432.63	725.27	1104.15
Price deflator (43rd round =100)	176	271	319	494

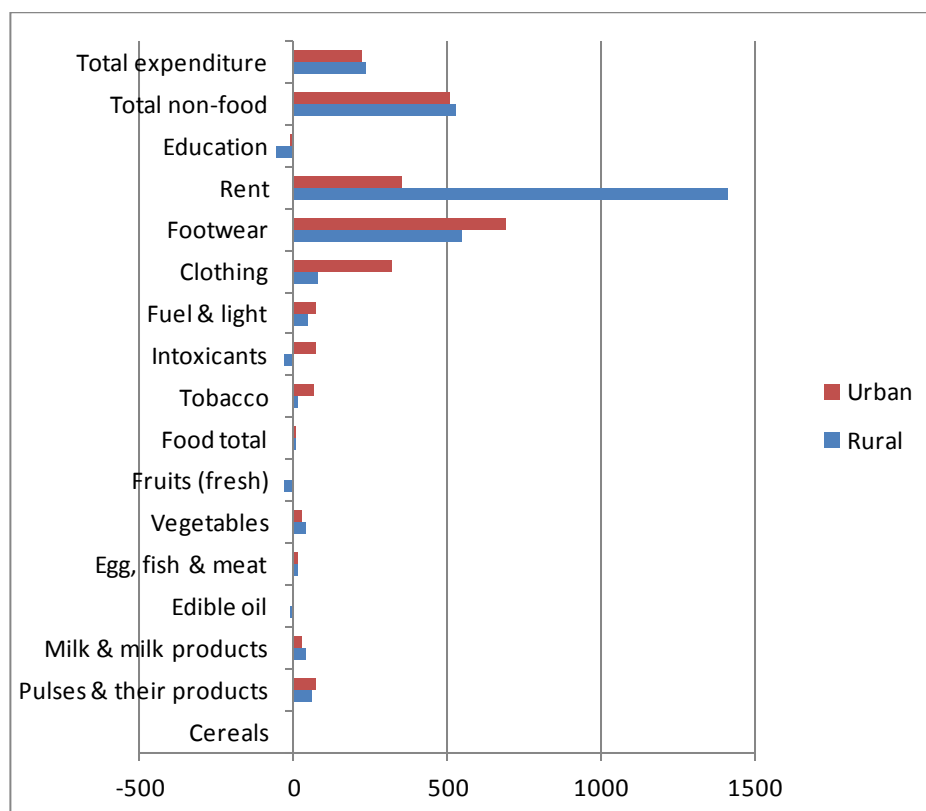
(Source: Author's calculation using unit level data of NSSO)

Table 93: MPCE (Urban) at Constant Prices (Rs.)

Major Items	50 th R	55 th R	61 st R	66 th R
Cereals	40.25	24.81	0.00	39.26
Pulses & their products	7.09	10.31	0.00	12.13
Milk & milk products	21.57	26.20	0.00	28.08
Edible oil	9.45	8.71	0.00	9.10
Egg, fish & meat	30.90	34.89	0.00	36.08
Vegetables	12.26	15.76	0.00	15.36
Fruits (fresh)	19.67	18.57	0.00	18.89
Food total	184.12	180.56	0.00	199.45
Tobacco	4.44	7.28	0.00	7.41
Intoxicants	7.51	21.56	0.00	13.07
Fuel & light	18.03	20.18	31.74	30.82
Clothing	12.05	16.25	66.81	50.84
Footwear	2.24	4.24	16.13	17.69
Education	18.25	11.92	18.49	16.15
Total non-food	136.80	322.86	1444.92	835.29
Total expenditure	320.92	503.42	1444.92	1034.74
Price deflator (43rd round =100)	173	271	338	503

(Source: Author's calculation using unit level data of NSSO)

Figure 13: Growth in MPCE from 50th to 66th round at constant prices (Per cent)



Source: Author's calculation using unit level data of NSSO

8.8 Poverty

The official poverty estimates for Goa during different years estimated by the Planning Commission of India may be seen in table 94. These poverty estimates are based on head count ratio. This is the ratio of number of people below the poverty line divided by the total population.

Table 94: Poverty rates (Per cent) for Goa and India

Sl. No.	Year	Planning Commission		Tendulkar Methodology		Rangarajan Methodology	
		Goa	India	Goa	India	Goa	India
1	1973-74	44.26	54.88	-	-	-	-
2	1977-78	37.23	51.32	-	-	-	-
3	1983	18.90	44.48	-	-	-	-
4	1987-88	24.52	38.86	-	-	-	-
5	1993-94	14.92	35.97	20.8	45.3	-	-
6	1999-2000	4.40	26.10	-	-	-	-
7	2004-05	13.80	27.50	25.0	37.2	-	-
8	2009-10	8.70	29.80	8.7	29.8	10.8	38.2
9	2011-12	5.09	21.90	5.1	21.9	6.3	29.5

Source: (GOI, PC 2009 and 2014)

It is evident from Table 94 that the poverty estimates in Goa show an irregular trend. There seems to be dramatic decline in poverty from 1973-74 to 1983 and thereafter poverty showed an increase in the year 1987-88. But, it again showed a decline in the year 1993-94 and in 1999-2000. It showed a very small poor population. But, the Planning Commission estimates for the year 2004-05 again show higher level of poverty in Goa. Once again in 2009-10 and 2011-12 the poverty estimates declined further. When one compares this with official poverty estimates of India show a continuous declining trend and only the Tendulkar estimate for the year 2004-05 indicate higher level of poverty (GOI, PC 2009) and (GOI, PC 2014).

In recent years the Planning Commission has set up a new expert committee under the Chairmanship of C. Rangarajan, which submitted its report on July 2014. As per this report, during 2009-10 Goa's poverty was 10.8 per cent that is almost showing around 2 per cent higher figure compared to the Tendulkar Committee and for all India level it is very much higher, i.e., 38.2 per cent. Further, during the year 2011-12 Goa's poverty was 6.3 per cent, which is a little higher than that of Planning

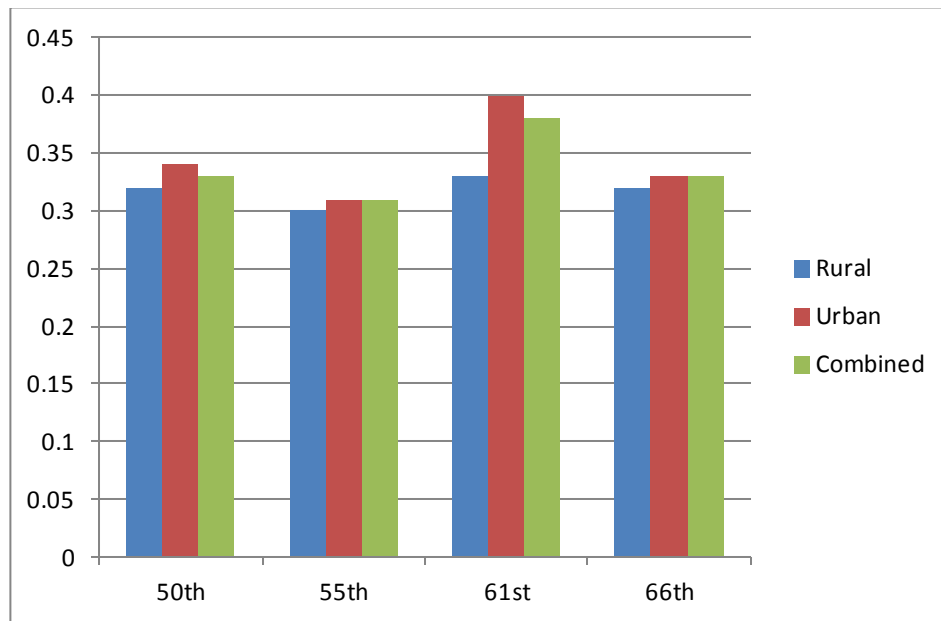
Commission estimation. It also shows a declining trend in all India poverty to 29.5 per cent.

The gap in poverty between Goa and India has widened over the years. The rate of decline in poverty was higher in Goa than the all India average. This is not surprising since Goa has developed at a much faster rate than the rest of India and thus has emerged as one of the most economically and socially developed states in India.

8.9 Consumption inequality

In order to measure consumption inequality Gini coefficients of MPCE have been estimated using unit level data for rural and urban areas separately and are given in figure 14. It is evident from the graph that the level of consumption inequality has not declined over the years both in rural and urban areas. The highest consumption inequality was observed in the 61st round being 0.33 (rural), 0.40 (urban) and 0.38 (combined).

Figure 14: Consumption inequality (Gini coefficient)



(Source: Author's calculation using unit level data of NSSO)

8.10 MPCE Variation in Rural and Urban Sectors in Goa

We tested to see if there was a significant difference in MPCE both in rural and urban areas. Variation in MPCE in rural and urban sectors in Goa has been studied using two –sample t test with unequal variance for 50th, 55th, 61st and 66th (Table 95 to 98). The variation in MPCE in rural and urban sectors in all the four rounds is statistically significant.

Table 95: Two-sample t test with unequal variances - 50th Round

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
R	146	544.3021	29.27767	353.7634	486.436	602.1683
U	213	666.9873	32.96998	481.181	601.9963	731.9783
combined	359	617.0931	23.09245	437.5395	571.6792	662.507
diff		-122.6852	44.0931		-209.4015	-35.96886
diff = mean(1) - mean(2)					t = 2.7824	
Ho: diff = 0				Satterthwaite's degrees of freedom = 355.224		
Ha: diff < 0				Ha: diff != 0		Ha: diff > 0
Pr(T < t) = 0.0028		Pr(T > t) = 0.0057		Pr(T > t) = 0.9972		

(Source: Author's calculation using unit level data of NSSO)

Table 96: Two-sample t test with unequal variances - 55th Round

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
R	192	1071.615	45.89915	635.9973	981.0802	1162.149
U	284	1356.289	51.43926	866.8698	1255.037	1457.541
Combined	476	1241.462	36.37764	793.6665	1169.981	1312.943
diff		-284.6741	68.94004		-420.142	-149.2059
diff = mean(1) - mean(2)					t = -4.1293	
Ho: diff = 0				Satterthwaite's degrees of freedom = 470.819		
Ha: diff < 0				Ha: diff != 0		Ha: diff > 0
Pr(T < t) = 0.0000		Pr(T > t) = 0.0000		Pr(T > t) = 1.0000		

(Source: Author's calculation using unit level data of NSSO)

Table 97: Two-sample t test with unequal variances -61st Round

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
R	160	1093.01	58.65596	741.9457	977.1651	1208.856
U	238	1434.061	118.6125	1829.864	1200.391	1667.73
combined	398	1296.955	75.14515	1499.141	1149.223	1444.687
diff		-341.0505	132.3232		-601.3339	-80.76707
diff = mean(1) - mean(2)					t = -2.5774	
Ho: diff = 0				Satterthwaite's degrees of freedom = 337.045		
Ha: diff < 0				Ha: diff != 0		Ha: diff > 0
Pr(T < t) = 0.0052		Pr(T > t) = 0.0104		Pr(T > t) = 0.9948		

(Source: Author's calculation using unit level data of NSSO)

Table 98: Two-sample t test with unequal variances - 66th Round

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
R	159	2083.497	165.7895	2090.526	1756.048	2410.947
U	285	2636.459	288.5978	4872.092	2068.397	3204.521
combined	444	2438.439	194.7899	4104.477	2055.612	2821.266
diff		-552.9614	332.8286		-1207.178	101.2553
diff = mean(1) - mean(2)					t =	-1.6614
Ho: diff = 0		Satterthwaite's degrees of freedom =			420.132	
Ha: diff < 0		Ha: diff != 0			Ha: diff > 0	
Pr(T < t) = 0.0487		Pr(T > t) = 0.0974			Pr(T > t) = 0.9513	

(Source: Author's calculation using unit level data of NSSO)

8.11 MPCE Variation among Social Group and across Religion in Goa

We asked the question whether there is a variation in MPCE among different social groups and across religion. The null hypothesis is that MPCE among different social groups and religion is equal. We use multivariate test for means of MPCE for the 50th, 55th, 61st and 66th rounds and the results are presented in (Tables 99 to 102).

Interestingly the test statistics, (F- statistics) is significant only in the 55th round. For the other 3 rounds the F-statistics is not significant. This indicates that the null hypothesis is cannot be rejected in the 50th, 55th, 61st and 66th round. This indicates that the different in means of MPCE among different religion and social groups is not significant in Goa.

Table 99: Test for equality assuming homogeneity (50th round)

	Statistic	F(df1,	df2) = F	Prob>F
Wilks' lambda	0.9752	8.0	350.0	1.11 0.3531 e
Pillai's trace	0.0248	8.0	350.0	1.11 0.3531 e
Lawley-Hotelling trace	0.0255	8.0	350.0	1.11 0.3531 e
Roy's largest root	0.0255	8.0	350.0	1.11 0.3531 e

e = exact, a = approximate, u = upper bound on F

(Source: Author's calculation using unit level data of NSSO)

Table 100: Test for equality assuming homogeneity (55th round)

	Statistic	F(df1,	df2) = F	Prob>F
Wilks' lambda	0.9589	9.0	466.0	2.22 0.0199 e
Pillai's trace	0.0411	9.0	466.0	2.22 0.0199 e
Lawley-Hotelling trace	0.0429	9.0	466.0	2.22 0.0199 e
Roy's largest root	0.0429	9.0	466.0	2.22 0.0199 e

e = exact, a = approximate, u = upper bound on F

(Source: Author's calculation using unit level data of NSSO)

Table 101: Test for equality assuming homogeneity (61st round)

	Statistic	F(df1,	df2) = F	Prob>F
Wilks' lambda	0.9783	5.0	392.0	1.74 0.1253 e
Pillai's trace	0.0217	5.0	392.0	1.74 0.1253 e
Lawley-Hotelling trace	0.0221	5.0	392.0	1.74 0.1253 e
Roy's largest root	0.0221	5.0	392.0	1.74 0.1253 e

e = exact, a = approximate, u = upper bound on F

(Source: Author's calculation using unit level data of NSSO)

Table 102: Test for equality assuming homogeneity (66th round)

	Statistic	F(df1,	df2) = F	Prob>F
Wilks' lambda	0.9870	9.0	434.0	0.64 0.7653 e
Pillai's trace	0.0130	9.0	434.0	0.64 0.7653 e
Lawley-Hotelling trace	0.0132	9.0	434.0	0.64 0.7653 e
Roy's largest root	0.0132	9.0	434.0	0.64 0.7653 e

e = exact, a = approximate, u = upper bound on F

(Source: Author's calculation using unit level data of NSSO)

This is a surprising result given that the All-India results gave was significant differences among social group and religions. One reason for such a finding could be the small sample chosen for Goa by NSSO.

8.12 Conclusion

Goa's consumption pattern is showing stagnancy in the consumption of essential food items while there is significant increase in the consumption of non-food items. This is the characteristic of regions with a better standard of living, changing life style and urbanization. We also notice that poverty has declined rapidly in Goa which is a good outcome.

All is not well though. Even though the consumption behaviour of Goa is changing, its per capita income and standard of living is improving, inequality is still showing a higher trend. There is existence of almost 30 per cent gap between rich and poor, which is a matter of concern. It is also important to note that consumption inequality in Goa has not declined over the years both in rural and urban areas.

Gap in poverty between Goa and India has widened over the years and the rate of decline in poverty was higher in Goa than the all India average. Goa has developed at a much faster pace than rest of India and thus has emerged as economically and socially developed State in India.

Goa, being a small state has great opportunity to aim for 'zero percent' poverty by mapping the poor households and providing them with basic amenities and bringing them under the umbrella of 'Freedom from Hunger' programme and reduce inequality to the extent possible.

Analysis of data using two-sample t-test with unequal variances reveals that the difference in MPCE between rural and urban areas in all the four rounds is statistically significant.

The results of multivariate test of means of MPCE by social group and religion reveals that F-statistics is not significant in three of the four the rounds which suggests that the difference in means of MPCE among different religion and social groups is not significant in Goa.

It may be concluded that although the difference in MPCE between rural and urban Goa is statistically significant, different religions and social groups in Goa have not been significantly deprived off from the fruits of progress and prosperity.

Chapter 9

Major Findings and Conclusion

9.1. Major Findings

Our study aimed to study the consumption pattern, poverty and inequality in India using the unit level (raw) data released by NSSO in respect of four quinquennial rounds, i.e., 50th (1993-94), 55th (1999-2000), 61st (2004-2005) and 66th (2009-2010) rounds.

Poverty analysis in India is a matter of great controversy. The official poverty estimates in India are anchored on 1973-74 poverty lines based on the minimum calorie norm.

Poverty estimates in India are not uniform and they vary based on the methodology adopted for the purpose. Different methodology gives different poverty estimates. Therefore, the extent of poverty in India and the methodology used for its estimates are still a zone for controversy.

Irrespective of the methodology for estimation of poverty, what is a matter of concern is that in spite of decline in poverty estimates the number of poor in absolute terms is increasing mainly because of compound annual rate of growth in population being higher than the poverty reduction. Therefore, the real issue is not the methodology of estimation but the existence of widespread poverty and its very poor reduction rate observed so far. Probably there is a need to give a fresh look at poverty alleviation programmes and try to evolve new schemes, programmes,

mechanism and direction so as to increase the annual poverty reduction rate with a time bound outcome oriented approach.

Poverty decomposition indices have been worked out using FGT methodology for four rounds of NSSO. Poverty line (PL) is taken from the published official documents of Planning Commission of India and is used for calculating poverty decomposition indices both in rural and urban areas. The decomposition indices comprise Head Count Ratio (HCR), Poverty Gap Ratio (PGR) and Foster, Greer, Thorbecke (FGT) ratio. The HCR of poverty has declined marginally from 27.91 per cent in 1993-94 to 23.86 per cent in 2009-10 in rural areas. In urban areas HCR has declined from 24.26 per cent to 22.85 per cent during the same period. While in rural areas poverty gap ratio and poverty severity index shows declining trend, in urban areas these ratios have increased during the period 1993-94 to 2004-05.

The results of the poverty decomposition indices show irregular trend in the four rounds of NSSO. While from 50th round to 55th round the indices show a sharp decline, from 55th round to 61st round the indices show a sharp increase and thereafter show a decline in the 66th round. It is important to note that these indices are directly related to the poverty line of respective years. It is also observed that increase in poverty from round to round is irregular. In rural areas, while the poverty line has increased by 59.1 per cent from 50th to 55th round, it has increased only by 36.4 per cent from 55th to 61st round and 50.6 per cent from 61st to 66th round. Similar is the trend in urban areas. In urban areas, while the poverty line has increased by 61.4 per cent from 50th to 55th round, it has increased only by 27.5 per cent from 55th to 61st round and 48.5 per cent from 61st to 66th round.

Our study confirms that there is a gradual shift from the consumption of food items to non-food items. It is possible that the price rise caused the curtailing of cereal consumption and use of more vegetables, milk, egg and fruits by households. Education, increase in income, occupational changes, etc, have also contributed to the rise in the consumption of high quality food items. Similarly increase in non food items, out of the home food consumption etc, are also increasing.

The study shows that in India, the traditional method of using firewood, kerosene and other method of cooking was declining in recent years and LPG is gaining in popularity. It is also important to note that the MPCE of households where there was no cooking arrangement is more in urban areas than in rural areas in all the rounds. MPCE of households, using electricity as primary source of energy for lighting is highest, followed by households using candle, gas and kerosene in all the four rounds.

Regarding Household types, in rural areas over the years the proportion of agricultural households has declined while the non-agricultural households have increased. In urban areas comparison of 50th round and 66th round reveals that there was only marginal variation in the proportion of household types of 'Self employed' and decline in the regular wage/salary earners. However, the proportions of households in the category of 'casual labour' have increased. In rural areas the MPCE of self employed in non-agriculture sector and others are more than agricultural labour, self employed in agriculture and other labour. Overall the MPCE at constant prices of different household types are showing an increasing trend. Similarly in urban areas the MPCE of regular wage/salary earning households and others are more than the self employed and casual labour and also MPCE of all

household types show an increasing trend. The rural MPCE of various social groups increased considerably compared to the urban areas.

The total MPCE on food items was higher in urban areas than rural areas both in 50th and 66th round. However, non food MPCE in rural areas was lower than urban areas during both years. The total MPCE, taking both food and non-food items together, was lower in rural areas than urban areas during both years under consideration. At constant prices the consumption of cereals has declined from 50th round to 66th round both in rural and urban areas. Similarly, the proportion of expenditure on other food items like pulses, milk and its products, vegetables, fruits (fresh), etc have declined except the expenditure on dry fruits and spices which has increased marginally. Regarding non-food items the proportion of expenditure on pan, intoxicants, footwear and rent etc, are showing an increasing trend compared to tobacco, clothing, education, etc.

MPCE distribution in all the four rounds, (in rural and urban areas) is positively skewed and heavy tailed. The difference in MPCE in rural and urban sectors in all the four rounds is statistically highly significant.

From multivariate analysis we find that the difference in means of MPCE among different religion and social groups is statistically significant, implying differences across these groups.

The relationship between food expenditure and total expenditure reveals that it has a concave shape. This is in conformity with Engels law that suggests that as total expenditure of the people increases it will lead to increase in food consumption expenditure but at a decreasing rate.

We selected 8 states, viz, Bihar, Goa, Haryana, Kerala, Madhya Pradesh, Maharashtra, Odisha and Tamil Nadu in respect of 3 rounds. Bihar, a poor state shows higher expenditure on essential items like cereals and lower expenditure on high value food items like egg, fish and meat. On the other hand relatively rich states like Goa and Kerala reveal higher expenditure on high value food items like egg, fish and meat. Goa and Kerala similarly spend more on fruits than the national average. In case of non-food items also better off states exhibit higher expenditure on items like Clothing, fuel & light and rent. Overall expenditure on non-food items is higher in case of better off states like Goa and Kerala in comparison with all India average and Bihar.

We find that the gap between the lower and upper bound of MPCE is lower in Bihar in comparison with the Goa and Kerala. Interestingly the lower bound of rural MPCE of Goa is more than the upper bound of MPCE of Bihar.

In rural areas, the lower bound MPCE of Goa is either higher or marginally close to the upper bound MPCE in respect of Bihar, Odisha, Madhya Pradesh, Maharashtra and All India in all the three rounds. However, similar trend is not seen in urban areas.

In rural areas the all-India MPCE in the upper bound is marginally higher than the Lower bound of MPCE of Goa. Thus, the distance in MPCE between Goa and all India is high, more in rural areas than in urban areas. This trend is visible in all the four round of NSSO. Similar trend in MPCE range of expenditure is seen for both major food and non-food items in selected states and All India.

In the 50th round there is wide gap between food and non food proportion both in rural and urban areas. Food proportion was much higher than non-food proportion.

However, this gap between food and non-food expenditure has declined significantly both in rural and urban areas mainly due to increase in non-food expenditure.

Gini Coefficient reveals that in the recent 66th round of NSSO, the inequality in rural areas in Bihar is lowest being 28 per cent while it is highest in Kerala (51 per cent). In urban areas, it is lowest in Madhya Pradesh (33 per cent), while it is highest again in Kerala (48 per cent). Further, Lorenze curve analysis reveals that in all the rounds non-food expenditure inequality is higher than food inequality.

The inequality distance in Goa both within rural and urban areas as well as between rural and urban areas is low and more or less stable in all the rounds. i.e., in rural areas it ranged from 30 to 32 per cent and in urban areas it ranged from 31 to 40 percent. But, in Bihar though the inequality distance within rural and urban areas is relatively low, between rural and urban areas it is higher. It is interesting to note that inequality in Kerala is more than Goa and the all-India average, which varies from around 34 to 51 per cent.

The level of consumption inequality in India has declined marginally over the years both in rural and urban areas. Further, difference in inequality between rural and urban areas is also marginal.

Percentile ratio reveals that MPCE of the people that is higher than the 90 per cent of the population is more than 3 times the MPCE of the people that is higher than the bottom 10 per cent of the population in all the three rounds both in rural and urban areas in all the three religions under study. In other words we may say that highest spending people spend three times more than the lowest spending people. Both, the Generalized Entropy index and Atkinson's index shows increasing trend in inequality from lower tail to upper tail of MPCE distribution among all the social

groups both in rural and urban areas in all the three rounds in all the three religions. Gini index reveals marginal variation in inequality between rural and urban areas among all the social groups in all the three religions. A comparison of decomposition analysis of MPCE with Kuznets curve reveals that as the expenditure level increases the inequality is found to be increasing, which indicates that Indian economy is still an emerging economy and it is yet to reach the half way of the Kuznets curve. Once the MPCE reaches the top of the curve, then the inequality in MPCE may start declining. India is yet to reach this stage.

As regards proportion of food expenditure in the total expenditure, in rural areas, among Hindus, the highest expenditure on food but the lowest food expenditure proportion is observed among “others” followed by OBC, SC and ST, across the 3 rounds. However, among Islam, lowest food proportion expenditure is seen among OBC followed by ST, Others and SC. Similarly among Christianity, highest expenditure but lowest expenditure proportion on food is seen among “Others” followed by OBC, ST and SC across the 3 rounds. In urban areas, among the Hindus, highest expenditure and lowest food expenditure proportion is observed among “Others” followed by OBC, ST and SC. However, among Islam, lowest food proportion expenditure is seen among SC followed by Others, OBC and ST. We find that Christian households who follow had the lowest expenditure proportion on food by “Others” followed by OBC, ST and SC across the three rounds.

Regression analysis reveals that in the 50th round consumption expenditure is greater for General but lower of SC when compared to that of ST households in all the three religions. In the 61st round, among Hindus and Islam, General is positive and both SC and OBC are negative suggesting that consumption expenditure is greater for

General but lower of SC and OBC. However, in the 66th round, General and OBC are positive and SC is negative suggesting that consumption expenditure is greater for General followed by OBC but lower of SC when compared to that of ST households.

Goa, one of the highly developed states in the country is showing stagnancy in the consumption of essential food items while there is significant increase in the consumption of non-food items which is the characteristic of better standard of living, changing life style and urbanization.

All is not well though. Even though the consumption behaviour of Goa is changing, its per capita income and standard of living is improving, inequality is still showing a higher trend. There is existence of almost 30 per cent gap between rich and poor, which is a matter of concern. It is also important to note that consumption inequality in Goa has not declined over the years both in rural and urban areas.

Gap in poverty between Goa and India has widened over the years. This indicates that the rate of decline in poverty was higher in Goa than the all India average. Goa has developed at a much faster pace than rest of India and thus has emerged as economically and socially developed.

The irregular trend observed in poverty rates may be either attributable to methodological problems in poverty estimation or sampling errors casting doubts on the reliability of sample itself. Goa can reduce its poverty and target to be a 'zero poverty' state.

Analysis of data using two-sample t-test with unequal variances reveals that the difference in MPCE between rural and urban areas in all the four rounds is statistically significant.

The results of multivariate test of means of MPCE by social group and religion reveals that F-statistics is not significant in all the four rounds which suggest that the difference in means of MPCE among different religion and social groups is not significant in Goa.

9.2 Contribution and Conclusion of the study

This study contributes to the literature extending the analysis to the 66th round. In addition to analysing the poverty debate in India our study has gone a step further by studying poverty decomposition using FGT analysis which covers both depth and severity of poverty. Inequality decomposition is also studied among social groups and religion. This is also the first study that has examined consumption and inequality in Goa based on NSSO data.

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