Chapter-2 Review of Literature
Chapter 2: Review of Literature

A review of available literature related to the subject is an important and integral part of any research study. A critical survey of the literature on the subject will help in framing the objectives and methodology. A review of literature thus helps in identifying research gaps in the subject and the need for the present study. In this chapter an attempt has been made to critically review the literature of past research studies relevant to the present study and is presented as follows;

2.1 Regional Level Studies

Murthy, G.V.S.N. (1971) had analysed consumption pattern in Gujarat by utilizing NSS data on consumption. Temporal stability of Engel curves was noticed for almost all the commodity groups in the rural sector with an exception of 'other non-food'. In the urban sector the instability of parameters of Engel curve is noticed for almost all the commodity groups with an exception of milk and milk products, food total and clothing.

Mehta, B.C. (1971) by using the NSS data analysed the differences in the elasticity of consumption expenditure of different commodities with respect to income groups in the rural and the urban areas of Rajasthan. The expenditure elasticity except for fuel and light was found to be more in the rural areas than in the urban areas. The expenditure elasticity of food grains decreases with increasing total expenditure in the urban areas. Elasticities for different items showed interesting contrast in rural and urban areas.

Joher et. al. (1982) had analysed consumption pattern to estimate expenditure elasticities of demand for different commodity groups for Punjab. Using the data from NSS reports pertaining to 21st and 28th rounds the study examined the inter-regional and inter-temporal variations in consumption pattern. The study has experimented with three forms of Engel functions namely linear, semi log and double log for all commodity groups. Covariance analysis has been applied to study inter regional and inter temporal variations.
in the consumption pattern. The study showed that the expenditure elasticities of demand for non-food items to be almost double than those of food items. Within the food group relatively high elasticities were observed for quality food items viz meat, fish etc. Within the non-food group the expenditure elasticities for clothing, durables etc. are more elastic than for fuel and light in both areas. Both the rural and the urban households exhibited changes in their consumption behaviour between two periods. Also tastes and preferences have been found to change significantly during the two periods.

Mukhopadyay et al. (1987) had examined the nature of inter-state differences in the expenditure patterns of the rural households in India. The analysis covers three item groups namely cereals substitutes, all food and all non-food. To examine the nature of inter-state differences in expenditure patterns pair-wise analysis of covariance test has been applied to item-specific Engel curves for each pair of States. The state-wise average elasticities for different items have also been derived. On obtaining significant inter-state difference in item specific expenditure patterns investigation had been made to examine how far the observed differences in expenditure patterns could be explained by the variations in the item-wise cash expenditure patterns across states. The study reveals that the expenditure patterns of the rural households in India for cereals and cereals substitutes and all food items as reflected by Engel elasticities and ratios are considerably different across states.

Sooryamoorthy (1993) had identified the significance of certain socio economic and geographical variables that have an enhancing role in the new trend of consumerism in Kerala. Developing an operational definition of the concept of consumerism he empirically tested the relevance of the chosen variables at the micro level. The study pertained to lower and middle-income classes and was based on data collected from households. The consumption items like beverages, refreshments and processed food, clothing and footwear are chosen for the analysis and expenditure incurred on these items were analysed to find the influence of independent variables namely income, occupation, educational standard and geographical factors. It was found that the role of the independent variables on influencing the expenditure pattern of the respondents varied
from item to item. The variables income, occupation and education were found to enhance the expenditure on all the chosen items. Except in the purchases of beverages, refreshments and processed food, the level of consumption in both rural and urban areas of Kerala remains similar. The study identifies the middle income class, the employed in regular salaried jobs and the well educated as the category of consumers who spend conspicuously on the items under study.

Pavithra B.S. et. al. (2009) had examined the food consumption pattern in Karnataka. This study was conducted in 2007-08. The published data of NSSO rounds from 27th round (1972-73), 50th round (1993-94) onwards was used for this study. The log inverse function and log-log inverse function were used for calculating various expenditure elasticities. This study concluded that the consumption of cereals had declined in Karnataka over a period of time. The monthly per capita consumption of pulses was almost stable over the two periods in rural and urban areas of Karnataka. The expenditure elasticities for all groups were less than unity in urban areas with the highest value being 0.96 for vegetables. The lowest expenditure elasticities were observed for cereals (0.70 in rural and 0.72 in urban areas). This was because food is a basic necessity of life.

2.2 National Level Studies

Thamarajakshi R (1971) had estimated the expenditure elasticities of demand in the agricultural and non-agricultural sectors for the agricultural and non agricultural products in India. The attempt in this paper is to estimate what may be more appropriately termed as ‘expenditure elasticities; of demand. In this study, the author had classified the economy into two broad sectors, viz. agricultural and non-agricultural. The agricultural sector includes crop and animal husbandry, and all that is not agricultural in this sense is termed as non-agricultural section. The data on monthly per capita consumption expenditure on agricultural and non agricultural products had been taken from the published reports of the NSS for 16 rounds of survey, spanning 1951-52 to 1960-61. The major conclusions of this study are; (i) The expenditure elasticities of demand of the agricultural and non-agricultural sectors products have remained more or less stable.
during this period. However expenditure elasticities of demand of the agricultural and non-agricultural sectors, for the non-agricultural products, have shown a tendency to rise. (ii) The expenditure elasticities for the non-agricultural products are consistently higher than those for the agricultural products; this is true for both the sectors, for the individual years, and hence for the entire period of the study. Elasticities are higher than unity in the case of the non-agricultural products and less than unity in the case of agricultural products.

Sinha R.P. (1966) had estimated the relationship between the total expenditure per person and the expenditure on various items of food in India. In order to measure the influence of income on consumption, he had estimated the consumption function on the basis of cross-sectional data provided by the report of National Sample Survey. For the sake of simplicity, author had expressed the relationship between total expenditure and expenditure on various food items in terms of income elasticity. This study concluded that expenditure elasticities for food grains, milk and milk products, edible oil, sugar, and salt are higher in rural than in urban areas. As against this, elasticities for meat, fish and eggs for the miscellaneous food group, and for total food are higher for the urban areas. As far as the regions are concerned, rural elasticities are higher than urban for all groups in South and the Northwest. As against this, urban elasticities for milk products are higher than rural in all the other regions. On the whole, the general pattern is that rural elasticities are higher for food grains, oil, sugar, and salt, and in some cases for milk products; urban elasticities are higher for meat, fish and eggs.

The National Council of Applied Economic Research, New Delhi conducted an All India Consumer Expenditure Survey under the title of “Pattern of Income and Expenditure, Vol:II (June, 1967)”. This study was sponsored and financed by Economic Research Services, U.S., Department of Agriculture. The NCAER undertook this project to study the effect of development on household consumption. The principal objective was to compare and contrast the pattern of consumer expenditure in those areas which were most exposed to development effort with those which were the least exposed. This survey was carried out in three rounds, each round with a different set of sample households; the
duration of each round was four months. These three rounds were completed between May-August, 1964 and January-April, 1965. This study was based on primary data collected in different rounds. The main conclusions of these study were, (i) a significant difference was observed in income and consumption status of the families whose heads pursue the same occupations in the development and non-development areas. (ii) The average per capita consumer expenditure per month on all goods and services works out to be Rs. 33 for the development areas, Rs. 23 for the non-development areas and Rs. 27 for the country whole, (iii) Concentration of expenditure in the higher income brackets, just like the concentration of income, is greater in the development areas than in the non-development areas. (iv) the per capita income of the development area was 50 percent higher than income of non-development areas, the per capita expenditure on cereals in the development areas is about 10 percent below the per capita expenditure in the non-development areas. The per capita expenditure on pulses also is lower in the development areas than in the non-development areas. (v) In the development areas the per capita expenditure per month on cereals ranges from Rs. 5 for the lowest income class (under Rs. 9 per month), to about Rs. 10 for the higher income class (Rs. 5 and above). The average per capita expenditure per month on cereals in the development areas ranges from about Rs. 7 for the lowest income group to Rs. 12 for higher income class.

Vaidyanathan A. (1974) had studied the pattern of inequalities in per capita consumption levels at the national level by principal occupational and land holding categories and by household size. The changes in the degree of consumption inequality by states and all India over the period 1958-59 to 1967-68 have been examined. Using Lorenz ratio the study has measured the extent of inequality in rural living standards. A comparison of the estimates of consumption inequality in rural areas as from the Rural Saving Survey of NCAER and those from the NSS data have been carried out. The overall inequality coefficients for landholding found to be much higher than for consumption that is the disparities in living standard were appreciably less than the disparities in landholding. Multiple regression analysis was used to examine the relative influence of landholdings and family size on per capita consumption found a positive correlation between land holdings size and per capita consumption and also a negative correlation between family
size and per capita consumption. The study of interstate disparities in consumption expenditure shows that average per capita consumption is below the national average in seven states in India. The inequalities in aggregate income and consumption were influenced by the distribution of income from animal husbandry and also non-agricultural activities.

Ray R. (1979) had estimated an expenditure system with household survey data in India. The author addressed the lack of studies that have researched the impacts of total expenditure, price and family size on household demand using time series budget data. The objective of the study was to create an extension of the AIDS model by including family size and applying it to Indian budget data to estimate price expenditure, and size elasticities (Ray, 1979, 595). The study also reviewed the effects of no economies of household size, no money illusions, and compared India's expenditures to those of other developing countries. The study used the AIDS model with some alterations, as the AIDS model does not implicitly include family size, the author decided to replace the price variable and inserted a normalized price vector that included family size. This was done in order to show the effect of prices and family size on budget share rather than showing the per capita real household expenditure. The estimation of the expenditure system was the OLS procedure without cross equation or non-linear restrictions, and the equations were estimated using data from rural, urban, and city data (Ray, 1979, 597). The author concluded that overall the system worked fairly well, and that there were a few problems with positive own-price elasticities, but most of parameters had the expected signs. The model fitted the rural area better than the urban areas but both had satisfactory R-squares, and the budget shares seemed to be more responsive to all items except clothing. The findings for both rural and urban were identical in all items that were considered luxuries in the urban areas were luxuries in the rural area too and vice-versa. This study compared India to other countries that had similar attributes, and was found to be most compatible to the Korean system and the estimated values between the two were very close.

Saha S. (1980) had estimated Engel elasticities for 101 items of consumption separately for the rural and the urban India using NSS budget data. Iyengar's (1960-64) method of
estimation based on the use of generalized concentration curves had been used along with method of weighted least squares for finding Engel elasticity of items. The estimate seems to vary, though slightly, from one method to the other. However the ordering of commodities on the elasticity scale is found to be approximately the same by all methods. An inter-temporal comparison of elasticities over three different NSS rounds found the Engel elasticity to be more or less stable across NSS rounds.

Majumder A. (1980) had made an attempt to compare the performance of the Linear Expenditure System (LES) with that of Almost Ideal Demand System (AIDS) on Indian consumer expenditure data for the rural and the urban sectors separately. This analysis thus covers the period from October 1953 – March 1954 (NSS 7th round) to October 1973 – June 1974 (NSS 28th round). The nine groups of items for which expenditure pattern is analysed are: (i) cereals and cereal substitute (ii) milk and milk products, (iii) edible oils, (iv) meat, fish and egg, (v) sugar etc. (vi) other food items (i.e. spices, salt, beverage, prepared food etc. (vii) clothing, (viii) fuel and light, and finally (ix) other non food items. The analysis has been carried out at two levels of aggregation, viz., one with the itemwise estimates of average per capita expenditure for all households in each round and another at a somewhat disaggregated level in which for each round estimates of average per capita expenditure for three ordinal groups of population, namely 30 per cent, the middle 40 per cent and the richest 30 per cent have been used. The comparison of the AIDS and LES has been made with particular reference to the income and price elasticities estimated from the two models. In the view of fact that the LES based estimates of the price elasticities are restricted due to the additivity of the direct utility function, the comparison with AIDS would bring out the qualities of the LES based elasticity estimates.

Gupta Anil (1986) had examined the aggregate consumption behaviour and trends in consumer expenditure in India using C.S.O. estimates of private final consumption expenditure for the time periods 1950-51 through 1978-80. The study applied the Ordinary Least Square Method to estimate various parameters of different consumption functions. MPC had been found to vary between 0.84 and 0.90 for the reference period
of 30 years. The MPC’s are found to be very high for the food items relative to those of the non-food items. The computed elasticities indicate that food items were necessities while most non-food items behave as luxuries and semi-luxuries. The estimated equations show the unexpected positive effect of prices on consumer expenditure on non-food items. The food items had negative price elasticities. Sectoral distribution show that MPC declines with sectoral shifts in favour of agriculture.

Subramaniam R. (1996) had analyzed the gender patterns in intra-household allocation of resources based on household level consumption data in India. The author had used the data on consumption from the ICRISAT VLS (International Crops Research Institute for the Semi-Arid Tropics Village Level Studies) Panel Data set. These data were from a survey initiated by ICRISAT in 1975 in three distinct agro-climatic regions of semi-arid tropical India. To analyse the relationship between the gender composition and consumption patterns of households the household specific fixed effect model had used. The results show that having a female child, ceteris paribus, reduces household food expenditure significantly, by about 16%; but having a male child does not have any significant effect on household food expenditure. However, there is no significant difference between the dummy coefficients themselves. The first male child increases (though not significantly) household food expenditure by about 7% and the first female child decreases it by about 12.5%. The marginal effect of the first child is the sum of the estimated coefficients for the child-dummy and the number of children variables. Note that the specifications here do not pick up any possible non-linearities in the marginal effects of children on consumption.

Bhalla G.S. and Hazell P. (1998) had made an attempt to calculate food and feed demand in 2020 under different scenarios of growth of per capita income in India. By using the 43rd round (1987&88) consumer expenditure survey of the National Sample Survey Organization (NSS), authors had estimated log-inverse Engel function across classwise data for different commodity groups separately for rural and urban areas. For the demand estimation, baseline projection was used. Baseline projection is based on population growth rate and expenditure elasticity. The results of this study show that whether India
will have a manageable cereal demand in 2020 depends critically on what happens to the livestock sector. Rapid economic growth, particularly if it is accompanied by significant reduction in poverty, will lead to escalating demand for milk, eggs and meat.

Abdulai et.al. (1999) had used Linear Approximate Almost Ideal Demand System (LA/AIDS) to estimate food demand for India. The study discussed the need to use demographic variables, such as, region, household size, education level, religion, and seasonality in estimating food consumption in India. Past studies have used aggregate household consumption data to estimate food demand in India due to non-availability of micro-level data. The objective of this study was to show that factors other than price and expenditure might be used to yield substantially greater precision in the estimation of demand parameters. The study estimated separate food demand for urban and rural population using household consumption survey data. The commodity groups used in the study were: milk and milk products, cereals and pulses, edible oils, meat, fish, and eggs, fruits and vegetables, and other foods. Demographic effects are incorporated in the model allowing the intercepts in the budget share equations to be a function of demographic variables. The results showed that all goods were normal since all expenditure elasticities were positive. The commodity groups that had expenditure elasticities less than one in rural and urban areas include cereal and pulses, edible oils and vegetables, and other foods. The expenditure elasticities for milk and milk products were found to be greater than one in rural and urban areas. All estimated compensated own price elasticities were negative and ranged between -0.43 and -0.74 for rural areas and -0.46 and -0.74 for urban areas. Interestingly, compensated cross price elasticites between cereals and pulses and milk and milk production are found to be negative in rural area suggesting a complimentary relationship between the food groups. However, in both rural and urban areas, the cross-price elasticities were positive, suggesting a substitution effect between groups.

Murthy K.N. (2001) in his working paper entitled “Effects of Change in Household Size, Consumer Taste and Preference on Demand Pattern in India” re-examined the usefulness of the linear expenditure system vis-à-vis two other flexible models viz. Nasse
expenditure system, a generalization of the linear expenditure system itself, and almost ideal demand system in the context for India. The above three models were extended by incorporating dummy variables representing three income groups, rural urban sectors and their interactions; one demographic variable namely household size and time trend variable representing consumer taste and preference in to the appropriate demand model parameters. National Sample Survey Data on the consumer expenditure for five quinquennial rounds are used for estimating the above models. Seven broad commodity groups are used in the analysis. The empirical result shows wide variation in marginal budget shares and demand elasticity across income groups, rural urban sectors and alternative models. The household size and consumer taste and preferences are found to be statistically significant.

Goyal S.K. and Singh J.P (2002) had addressed the following issues namely; (i) the present food supply and the trend for future. (ii) shift in food consumption pattern over the years and (iii) food demand projection for the next three decades in the context of food security. The data on consumer expenditure for both rural and urban consumers were collected from various rounds of National Sample Survey (NSS) Organization. For this study, they had collected data for five rounds viz. 27th (1972-73), 32nd (1977-78), 38th (1983), 43rd (1987-88) and 50th (1993-94). Expenditure elasticity was used as a proxy of income elasticity. The income elasticity was calculated by using data from the 47th round (1987-88) and 50th round (1993-94) of Consumer Expenditure Survey by fitting double logarithmic function.

The conclusions of this study are (i) The per capita consumption of cereals was higher in the urban areas as compared to the rural areas during this period. The per capita cereal consumption had declined from 185.66kg in 1972-73 to 185.54kg in 1977-78 in urban areas and it declined continuously from year to year and came down to 163.03kg in 1993-94 in the urban areas and from 136.75kg to 141.38kg and further declined to 129.33kg in the rural areas for the same years. The per capita consumption showed a declining trend during 1972-94 in both rural and urban areas, the decline was more pronounced in the rural areas (12.19%) than in the urban areas (5.43%) during this period. They further found that consumption of rice increased by 6.54 percent in the rural
areas and by 6.66 percent in the urban areas in 1993-94 over 1972-73. (ii) The monthly per capita total expenditure was only Rs. 44 in 1972-73 which increased to Rs. 281 in 1993-94 in the rural areas indicating annual increase by about 25 per cent. In the urban areas, it has increased from Rs. 63 in 1972-73 to Rs. 458 in 1993-94 indicating an annual increase of about 30 percent. The increase in consumption expenditure is the result of both rise in income and rise in price level. (iii) There was a substantial variation in percentage of total food expenditure on different food items between the rural and urban areas. The per cent expenditure on cereal was about 38 percent in the rural areas and about 26 per cent in urban areas during 1993-94. The share of each food item in total food consumption over year revealed that the percentage of consumption expenditure on cereals had declined continuously during 1972-94, it declined by 31 and 29 per cent in the rural and urban areas respectively, during this period, (iv) The share of pulse expenditure was more or less the same in both the areas during 1972-94, the share of all other non-cereal food items to total consumption expenditure exhibited an increasing trend over the years in both the areas. The percentage consumption expenditure on milk and milk products increased by 50 per cent in the rural areas while is urban areas, it increased by only 24 per cent during 1972-94. (v) The expenditure elasticities of different cereals in rural and urban areas had continuously declined over the period of time. Elasticity of wheat had declined from 0.52 in 1987-88 to 0.30 in 1993-94, for rice these values were 0.37 to 0.20 respectively. For pulses, elasticity had declined from 0.71 to 0.53 in the same years, (vi) the total food-grains demand is projected to be 258.26 million tons by 2009-10 which includes 236.61 million tones of cereals and 21.65 million tones of pulses. The demand is further expected to rise to 301 million tons by 2019-20 and to 330 million tons by 2029-30.

Rolando Sammy Renteria, B.S. (2003) had analyzed the future supply and demand situation for major grains (wheat, rice, and coarse grains) in India after taking into account physical land constraints, urbanization and feed-livestock linkages. The study used household survey data to estimate price and income responses of food demand separately for urban and rural areas. The survey was conducted by Indian collaborator at the National Institute of Extension Management, Hyderabad, India during the period...
from August 2000 to August 2001. The price and expenditure elasticities are estimated separately for urban and rural areas. Study concluded that as expected, expenditure elasticities for milk, meat, fish, eggs and fruits and vegetables are found to be high both in the rural and urban areas. However, expenditure elasticities for major grains are found to be relatively inelastic and slightly higher for rural and urban areas. All Hicksian own price elasticities both in rural and urban areas are found to be negative and inelastic. Most cross-price elasticities are found to be positive, suggesting that the food groups are substitutes of one another. Finally, the model is simulated with a set of exogenous assumptions to project ten year supply, demand and trade of wheat, rice and coarse grains. The results indicate that strong income growth and urbanization are expected to significantly change the composition of the food basket. On average per capita cereal consumption is projected to rise by around 8 percent from 166 kg in 2002/03 to 179 kg in 2012/13. Surprisingly per capita urban consumption which is 40 kg less than rural, is projected to increased by more than 24 kg, mostly in wheat, in the next ten years. On the other hand, rural per capita cereal consumption during the same period is increase likely to by a modest amount from 166 kg in 2002/03 to 179 kg in 2012/13. Total cereal consumption is projected to rise by 48 MMT, a 25 percent increase from the current consumption level.

Gangopadhyay S. and Wadhwa W. (2004) had studied the Pattern of Consumption Expenditure of India on the basis of data on Per Capita Consumption Expenditure collected by National Sample Survey Organization. It was a purely statistical exercise. The authors had transformed data from nominal terms to real terms with 1983 as the base year. After the final calculation, the results were compared with what was reported in National Account Statistics (NAS) data. They also calculated the proportion of total expenditure of “above and below 10 percent of the poverty line expenditure classes”. This has an obvious implication for the movement of poverty incidence over the years. The study reported that the per capita consumption is reflected in a lower weightage to necessities and higher weightage to the items that improve quality of life. This is not only for the country as whole but even across the states.
Prasad A.R. (2005) had examined the responsiveness of consumption expenditure on specific food items to the change in total food consumption expenditure during 1950-51 through 1999-2000 for Indian economy. This study is based on the Central Statistical Organisation (CSO) estimates of private final consumption expenditure in the domestic market taking into account the specific food items of consumption expenditure and their related aggregates. Time Series Data used in this study on private final consumption expenditure of specific food items in domestic market for 50 years and population for the corresponding years have been drawn from various publications of National Account Statistics. The real time series data on Private Final Consumption Expenditure of specific food items at constant (1993-94) prices are used in order to adjust the changes in prices and the estimates of parameters obtained provide correct idea about the nature of commodity. The major conclusions derived from this paper were, (i) The commodity group per capita food consumption expenditure increased at the compound rate of 0.98 per cent per annum. This growth rate is lower than the growth rate estimated for per capita consumption expenditure (1.34 percent). The per capita consumption expenditure on food items cereals & bread, sugar & gur and oil and oilseeds increased at the compound rate of 0.41 percent, 0.54 percent and 0.75 percent respectively and pulses declined at the rate of 0.78 percent annum, respectively. (ii) Time series estimates of expenditure elasticities of demand for food, which was stapled item, was less than unity corroborating the fact that food has not only a necessity at a point in time across the household, as often revealed by cross-estimates of expenditure elasticities, but also over a period of time revealed by time-series estimates.

Chatterjee S.et.al. (2006) had examined how the pattern of India’s food consumption and imports have been changing in recent times as a consequence of its faster economic growth and generally rising affluence levels and attempts to identify the areas of trade policy reform and their impact on economic growth and trade pattern since early 1990s. The paper goes on to estimate expenditure elasticity for demand, using NSS data. The calculations are based on the 43rd (1987/1988) and 57th (2001/2002) rounds of the National Sample Survey (NSS). The main conclusion of this survey is that, the per capita consumption of total cereals has continued to fall in both urban and rural households,
while that of total animal products, edible oils, vegetables and fruits have continued increase in rural and urban regions. There were some notable differences between both sets of time periods. Comparing 2002 with 1988, overall monthly per capita cereal consumption had clearly declined from 11.1kg to 9.4kg in urban areas and from 14.8kg to 12.2kg in rural households. At the same time, per capita consumption of meat, fish and eggs rose from 2kg to 2.5kg in urban areas, and from 0.9kg to 1.5kg in rural households. During this period the decline in cereal consumption was most noticeable in rural households, and by 2002 cereal accounted for one-third of the total food expenditure. In urban households, the share of cereals in total spending declined from 27 percent in 1988 to 24 percent by 2002. The share of pulses in both the rural and the urban areas food expenditure also declined between 1988 to 2002. Livestock products increased their share in food expenditure in both the rural and the urban regions over this period: from 18.6 percent to 21.3 percent in the urban households and from 14.3 percent to 17.4 percent in the rural areas. Dairy products accounted for the largest share of this spending on livestock products. They also found that the per capita consumption of non-staples was higher in both the rural and the urban households in 2002 compared with 1988. While levels of per capita consumption of the non-staple food remained higher in urban compared with rural areas in 2002, this gaps closed somewhat between 1988 and 2002 with higher rate of increase for some non-staple foods shown for rural households.

Further, the authors had determined the expenditure elasticity of demand, for urban households in 2002 and found that (i) elasticity for processed foods, meat, fish and eggs, and dairy products had exceed unity, while those for vegetables and fruits, and beverages, were close to unity. (ii) Elasticity for cereals had the lowest value.

Mittal S. (2006) had focused on the food basket of households in the rural and urban areas of India under different expenditure groups in the last two decades. The study investigates the factors that give rise to these changes, computes demand elasticities that explain the level of demand for the commodities by an individual consumer given the structure of relative prices, real income and a set of individual characteristics such as age, type of household (expenditure group) and geographical environment. On this basis the study projects the country’s food demand scenario in 2020. And finally, it aims at finding
answers to some of the debated issues relating to the country’s food security and decline in cereal consumption. The relevant data on the per capita consumption expenditure were collected from the consumer expenditure surveys of the National Sample Survey (NSS) rounds number 38, 43, 50 and 55 pertaining to the periods 1983, 1987-88, 1993-94 and 1999-2000, respectively. These data are disaggregated with the level of individual crops, food and non-food items, total consumer expenditure and family size. Prices for rural and urban areas are computed implicitly as expenditure divided by the quantities of each of the expenditure classes in each round. For the purpose of analysis four expenditure groups are formed for both rural and urban households on the basis of the poverty lines adopted by the Planning Commission (Radhakrishna and Ravi 1990; Kumar 1998). Based on the expenditure groups of the NSS persons, the author has derived three groups namely, (i) below 75 per cent of the poverty line as poor; (ii) those at 150 per cent of the poverty line are termed as non-poor and (iii) those above 150 per cent of the poverty line are considered rich. For knowing, what affects cereal consumption, a quadratic equation is used as a specific case to non-linear function. Since the model is quadratic in per capita expenditure it is named as the quad-AIDS model. She has also determined the demand elasticities for the demand projection.

The major results of this paper were, (i) The annual per capita consumption of foodgrains has declined between 1983 and 2000. The per capita consumption of cereals declined by 16.26 per cent while the per capita consumption of pulses increased marginally. The per capita consumption of vegetables and fruits, milk, meat, fish and eggs edible oil and sugar has increased. (ii) During the last two decades, as households moved from a lower expenditure class to a higher expenditure class there was a decline in additional cereal consumption. Decline in cereal consumption is substituted with increased consumption of vegetables and fruits, milk and meat, fish and eggs. (iii) The expenditure elasticity of food items fall as they move from rural households to urban households. The expenditure elasticity for cereals is very low but positive. It is nearly zero for urban households while for rural households it is around 0.2. Expenditure and price elasticities of demand for cereals are higher for the poor. The expenditure elasticity for cereals might be positive but the per capita consumption does not increase with total expenditure. For pulses, the expenditure elasticity shows a slight decline. The expenditure
elasticity for milk and meat, fish and eggs is greater than one and for sugar and vegetables and fruits it is very high.

Kumar P. et al. (2007) had provided empirical evidence on the nature and extent of long-term changes in consumption patterns and nutritional status of various socio-economic groups at the household level in rural and urban India as well as in some of the poorer states. It also takes stock of the changing consumption patterns of the poorest strata of population in rural and urban India. The unit data on dietary patterns and consumer expenditures collected by the National Sample Survey Organization (NSSO) at the national level were used for this study. The analysis was based on the 38th and 55th rounds of the National Sample Survey and pertained to the years 1983 (January to December) and 1999-2000 (July to June), respectively. The major conclusions and suggestions given by authors were as follows, (i) the per capita annual consumption of different food items, in 1983 and 1999-2000 by different income groups had changed due to the two types of effects. (a) Changes in consumption pattern of a group (poor or non-poor) over time, which have been termed as “structural shift” on account of “consumption diversification effect”. This change is the result of easier access to supply, changes in tastes and preferences, and changing relative prices, (b) Changes in food consumption as one moves from poor to non-poor group in the same year, which have been designated as “pure income effect”. This change is a result of an increase in the income level of the consumer. (ii) another important feature visible from the this paper that per capita consumption of coarse cereals in India has declined substantially over the years for both the income groups. For bottom income group the per capita consumption of coarse cereals has declined by 67.8 percent during the period of 1983 to 1999-2000 and for upper income it has declined by 68.8 per cent during this period. (iii) In the case of the poor, though the per capita annual consumption of the staple high-value cereals like rice has increased by 9 kg on account of increase in income as well as tastes and preferences, total consumption, however, has declined by 10 per cent due to rise in prices of cereals in real terms during the 1990s as well as dietary diversification towards non-food grains. (iv) Over the years, the per capita annual consumption of edible oils, vegetables, fruits, milk, meat, fish, eggs and sugar has increased substantially in both
upper and bottom income groups. The increase is quite significant in the bottom group. For example, in both groups, the increase in per capita annual consumption during 1983 to 1999-2000 was the highest for fruits (169 per cent in bottom group and 184 per cent in upper group), followed by meat, fish and eggs (100 per cent and 122 per cent) edible oil (77 per cent and 88 per cent), vegetables (50 per cent and 39 per cent), and milk (31.6 per cent and 30.7 per cent). (v) There were notable structural changes in food and non-food consumption in rural and urban areas of India during the period of 1983 to 1999-2000. The proportion of total expenditure spent on food consumption had declined by 7.6 per cent in rural area during the same year and for urban area it had declined by 8.4 per cent. On the other hand the proportion of total expenditure spent on non-food consumption had risen by 7.5 percent in rural area during this period and by 8.4 per cent for urban area.

Sengupta A. et.al. (2008) had attempted to define the common people of India in terms of level of consumption and to examine their socio-economic profile in different periods of time since the early 1990s with a view to assessing how the economic growth process has impacted on their lives. The authors have worked on the data sets available from the surveys of National Sample Survey Organization (NSSO) on employment-unemployment and consumption expenditure. They have classified each sample household as accordingly belonging to the “Extremely poor”, “Poor”, “Marginal”, “Vulnerable”, “Middle income” and “High income” groups if the monthly expenditure (MPCE) of their households was below or above a specified multiple of the poverty line. The official estimates of poverty are computed by the Planning Commission from the quinquennial consumption expenditure surveys (CES). However, the analysis in this paper is based on consumption expenditure data as reported in the employment-unemployment survey (EUS) schedules to enable them to relate consumption expenditure status of the people to their work and activity status. The major conclusions of this study were, (i) During the period of 1993-94 to 2004-05, the percentage of extremely poor or poor had declined from 31 to 22 per cent and almost 41 per cent of people, consisting of the extremely poor, poor and marginal groups, survived on an average expenditure of less than Rs. 15 per day per capita consumption in 2004-05, which by all counts should be regarded as affording no more than a miserable existence. The vulnerable groups, whose average daily per
capita consumption was Rs. 20 could be described as people just above the poverty line with some bare minimal consumption over subsistence. (ii) In term of total population, the poor and vulnerable were 836 million (76.70%) out of total population of 1,090 million in 2004-05 compared to 732 million (81.88%) out of 894 million in 1993-94. Out of that, 237 million belonged to the marginal group of miserable existence at less than quarter above the poverty line. The group of vulnerable people with average per capita consumption of Rs. 20 a day were 392 million. More than the absolute level of consumption of those poor and vulnerable, what is more striking is the disparity between this group and the better off section classified here as the middle and high income. The per capita consumption expenditure of the middle and high income groups taken together is more than four times that of the extremely poor and poor and more than 2.5 times that of the marginal and vulnerable groups taken together. (iii) There are significant associations between consumption and household characteristics and work participation. Low consumption is associated with a low asset base, bigger household size and a higher dependency ratio. The work participation rate declined for all groups in 1999-2000, however it improved in 2004-05. (iv) The ratio of the average daily per capita expenditure of the high income group to that of the poor was 7.6 in 1993-94, the same in the case of the middle income group was 3.1. This ratio did not change much in 1999-2000 and 2004-05 except for a decrease to 7.3 in the case of the high income group in 1999-2000. Similarly, the ratio of average MPCE of the extremely poor and poor group to that middle and high income group was more than 4 in all the years. (v) the monthly total consumption expenditure has been increasing at an average annual rate of 3.3 per cent during the period from 1993-94 to 2004-05. While the growth rate during the period 1993-94 to 1999-2000 was lower at 2.6 per cent, it accelerated to about 4.2 per cent during 1999-2000 to 2004-05. There is a difference between per capita consumption growth and total consumption growth. This is because the size of each expenditure class has undergone some change.

Mittal S. (2008) had also examined the supply and demand trends of rice, wheat, total cereals, pulses, edible oil/seeds and sugar/sugarcane. This study provides the demand supply projections for food items during 2011, 2021 and 2026. The data sources, methodology of this study is same as the above mentioned study conducted in 2006.
paper concluded that an increase in total demand is mainly due to growth in population and per capita income. A diversification in consumption basket significantly away from cereals has been observed. On the supply side, production is constrained by low yield growths. This is more specific in context of total cereals and sugarcane.

Mittal S. (2010) had estimated the price and expenditure elasticities of food items and food groups in India by using the households’ consumer expenditure survey of the major National Sample Survey rounds. A two-stage Quadratic AIDS (QUAIDS) model is used to compute the coefficients and calculate the demand elasticities. In this model assumed of linearity in the expenditure function is given away. In this paper, author had applied the two-stage budgeting framework on the food sector to model the consumption behavior of households in India.

The first stage covered the coefficient of the estimated parameters of total expenditure function, which concluded that the coefficients of food and non-food price factors had a negative and significant effect on the total food expenditure and are as per expectation. The coefficient of per capita total expenditure and its square term are positive. The coefficient of the square term of per capita food expenditure is not significantly different from zero. This implies that the relation between expenditure and income change may not be non-linear. The linear term of per capita total expenditure is positive and significant; which indicate that the response of total food expenditure on income change is substantial. The coefficient of the family size variable is negative and significant. This implies that with a member added into a family the per capita expenditure on food declines due to reallocation of resources. Urbanization has a positive impact on food expenditure. Time trend is positive and significant. The parameters of the quadratic demand system of the food group cereals, pulses, vegetables and fruits, milk, edible oil, sugar and meat, fish and eggs are estimated in the second stage. The squared terms of per capita expenditure on food are significant only for pulses and edible oil. If the parameters are insignificant then it means that the expenditure elasticities are more or less constant across the income groups. Urbanization has a negative effect on cereals, pulses and sugar consumption. The consumption of vegetables and fruits, milk and edible oil increase with urbanization. The coefficient of own price is positive and highly
significant for the share of food groups. Even when price rise the households maintain the share of expenditure on the staple food in their basket. The expenditure elasticity of food items is lower in the urban households as compared to the rural households. Urban households have higher expenditure budget as compared to rural households. Similar pattern is also observed between different expenditure group households – poor households have higher expenditure elasticity than rich households. The all India expenditure elasticity for cereals is low but positive. It is nearly zero for urban households while for rural households it is around 0.2.

Kumar P. et.al (2011) had focused on the changes in food consumption pattern of Indian households and estimation of the demand parameters of major food commodities. The major food commodities included in this study are cereals, pulses, edible oil, fruits and vegetables, milk, sugar, meat, fish and eggs, as they constitute more than 95 percent of the total food consumed by the Indian households. The food demand elasticities had been estimated by using alternative methodological tools, namely Quadratic Almost Ideal Demand System (QUAIDS) and Food Characteristics Demand System (FCDS) model to enable a comparative as well as a realistic estimation. The household consumption expenditure data were collected from the NSSO covering the years 1983, 1987-88, 1993-94, 1999-00 and 2004-05 pertaining to 38th, 43rd, 50th, 55th and 61st rounds, respectively. The sample households were categorized into four expenditure income groups like very poor, moderately poor, non-poor lower and non-poor higher.

This study concluded that, consumers shift their budgetary allocation from cereals based food towards high-value commodities like fruits and vegetable, milk, fish, meat and meat products etc. The study had attributed this structural shift to changes in taste and preferences, easier access to supply, variation in relative prices etc. on the one hand and to 'pure income effect' resulting from the increase in income levels of the consumers on the other hand. The demand elasticities had observed to vary widely across income groups, and food commodities. The estimated income elasticites had been found to vary across income classes and were the lowest for cereal groups and highest for horticultural and livestock products. The magnitudes of elasticities had estimated higher for lower income groups and these tend to decrease as income increases. The analysis of
price and income effects based on the estimated demand system suggested that with increase in food price inflation, the demand for staple food (rice, wheat and sugar) may not be affected adversely but, that of high value food commodities is likely to be affected negatively. Therefore, the study had cautioned that if inflation in food prices remains unabated for an extended period, there is the possibility of reversal of the trend of diversification and that of consumers returning to cereal-dominated diet, thus accentuating under nourishment,

Sharma V. (2011) had focused on the change in food consumption pattern in rural and urban India and had estimated the expenditure elasticities of demand for food in rural and urban India. The expenditure elasticities had derived by using log linear model. This study utilizes the secondary data on Monthly per Capita Consumption Expenditure collected from the National Sample Survey Organization Publication. The major conclusions of this study are; (1) the consumption of cereals in quantity terms has declined in both rural and urban India. (2) In total cereals consumption, the rice followed by the wheat was the major cereal consumed in both locations and over two periods (3) The results indicate a higher demand for livestock and horticultural products in the future. (4) the food expenditure elasticity of all commodity groups was positive. This indicated that all the commodities were normal goods. The expenditure elasticity for all food groups were less than unity in urban areas with the highest value being 0.85 for pulses and beverage. (5) The low expenditure elasticity was observed for cereals (0.51 in rural and 0.53 in urban India). This was because food is a basic necessity for sustenance of life. The highest expenditure elasticity was observed for pulses and beverage (0.85) in urban and beverages in rural India (1.54).

Paul S. B. (2011) has presented some estimates for India that demonstrate that structural changes in the impact of income on food demand have been significant factors driving the changes in dietary patterns in this rapidly growing economy. This paper tries to take stock of the nutritional status of various income groups and how it has changed over time. The data used in this paper are taken from the unit-level records of the consumption schedules of the National Sample Surveys (NSS) in India. Author had selected two
specific 'thick' rounds, viz., 38th and 61st, to reflect any changes in a long-run period spanning before and after the economic reforms undertaken in 1991. A Quadratic Almost Ideal Demand System is estimated for six food groups. The estimation results confirm a shift in taste of both rural and urban households that explains low demand for nutrient-rich inexpensive food and a greater variety of expensive sources of nutrients. The quality of diet has been falling in terms of excessive fat intake with no sign of significant improvement in diet quality in terms of other nutrients. He had estimated the expenditure elasticities in rural areas for food items like cereals, pulses, milk, meat, fish & chicken and vegetable/fruits to 0.57, 0.78, 2.40, 1.27 and 0.88 for 2004-05. The price elasticities had estimated to -0.60, -0.85, -0.94, -1.20 and -0.85 respectively for 2004-05. In urban areas, the expenditure elasticities of these food items found to be 0.51, 0.73, 1.73, 1.37 and 0.99 respectively and the own price elasticities were found to be -0.69, -0.79, -0.90, -0.89 and -0.83 respectively.

Pons N. (2011) had assessed the impact of a simulated increase in food prices on the household's welfare in India from the NSS Survey "Consumer Expenditure" (Round 61st). The impact on consumers of an increase in prices is often calculated using consumer surplus. The elasticities of different food items are derived from the AIDS model. The author had estimated the compensating variation of four different scenarios of price changes. Each scenario refers to one specific event that has occurred in India since 2005. The results of this study show that there are differential impacts on different categories of households. Rural households are more vulnerable than urban households. In addition, the poorest households of both sectors are more penalized by rising food price than the richest households. The impact depends also on the commodity which price has increased. Indeed, an increase in cereal prices affects more the households than the same increase in fruit price.

Deepankar B. and Basole A. (2013) had empirically investigated the relationship between share of expenditure spent on non-food essentials and calories intake over time taking advantage of regional variation in these variable in India. The authored had compiled the panel data set from 38th, 43rd, 50th, 55th, 61st and 66th rounds of National Sample Survey
Organization. The fixed effects panel regression model applied in this study. They concluded that there is robust significant negative effect of the share of non-food essential expenditure on calories intake; and this supported the food budget squeeze hypothesis. In quantitative terms, they found that a one percentage point increase in the share of monthly expenditure on non-food essentials (education, health care, transportation and consumer services) is associated with a one percent declined in calories intake after controlling for changes in real expenditure, the relative price of food, calories needs, home cereal consumption and versification of diets.

Kumar P. (N.D.) had examined the structural changes in consumption pattern for food and projects the short and long term demand for high value commodities like milk, fruits, vegetables, meat, eggs and fish in India. The paper also identified the critical constraints which restrict the process of diversifications. The related data sets of consumption expenditure were collected from National Sample Survey Organization’s various rounds namely, 32nd (1977-78) and 43rd (1987-88). The major observation by the author were, (i) Per capita aggregate cereal consumption for food has declined somewhat over the past three decades, while the consumption of fruits, vegetables, meat, fish, eggs and dairy products have increased. (ii) As populations move from rural to urban areas, the structural shift in consumption pattern can take place as a result of the (a) wider choice of available food in urban market, (b) urban lifestyle are exposed to the rich variety of dietary patterns of foreign cultures, (c) urban lifestyle may prefer the foods which require less time to prepare, (d) urban populations tends to be more sedentary and require a lower energy, expenditure and so a lower calories intake (e) urban residents typically do not grow own food and thus their consumption choices are not constrained.

2.3 International Level Studies

Stone R. (1954) had analysed the pattern of demand for consumer's goods relating to United Kingdom over the years 1920-1938 on the basis of annual data. Investigation on different group of consumer expenditure, quantities bought and prices paid were conducted. To analyse demand, the study has applied Linear Expenditure System, which
is compatible with three conditions imposed on demand systems. i.e. additivity, homogeneity and symmetry. The analysis of a system of size commodity group, among which the total of consumer's expenditure per equivalent adult has been divided, is provided.

Houthakker H.S. (1957) had compared elasticities of food, clothing, housing band miscellaneous items with respect to total expenditure and family size using data from surveys conducted in 30 different countries. Regression analysis was used for this purpose. Money expenditure was used as the dependant variable rather than quantities used by households. Households were cross-classified by income or total expenditure and family size. It was found that the elasticities of four main items of expenditure with respect to total expenditure are similar (but not equal) and that the elasticities with respect to family size were rather similar (but also unequal) for food and miscellaneous items and irregular for clothing and housing. The results were in conformity with Engel's Law.

Blancifort L. and Green R. (1983) had used the AIDS model in dynamic way by incorporating habit effects in United States. The Annual United States time series data for the years 1948 to 1978 were used to estimate the demand systems. This data had classified in 11-aggregate commodity. the commodities are food, alcohol and tobacco, clothing, housing, utilities, transportation, medical care, durable goods, other nondurable goods, other services and other miscellaneous goods. By explicitly including this dynamic structure into the AIDS, the temporal relationships between price and income elasticity estimates can be examined. The homogeneity and symmetry restrictions which were rejected by Deaton and Muellbauer (1980a) are tested with the more dynamic generalized AIDS to determine if the exclusion of dynamic elements may have accounted for their result. The results indicate that habit formation is the reason for the autocorrelation found in the residuals of the demand equations. All of the income elasticities are positive and all of the own-price elasticities are negative as expected. Meats, fruits and vegetables, and cereal and bakery products are relative necessities for the dynamic model with the autocorrelation parameter unconstrained. Meats, fruits and
vegetables, and cereal and bakery products are relative necessities for the dynamic model with the autocorrelation parameter unconstrained.

Dissanayake M. and Files (1988) had estimated of Engel curves for the Srilankan economy considering expenditure on all non-durable goods and with special importance to the important category of food expenditure. The study analysed cross section per capita household expenditure using the data of 1981-82 survey reported by Central Bank of Ceylon. The study has estimated complete Engel systems for non-durable expenditure categories and also individual food sub categories.

Huang J. and David C. (1993) had estimated the demand for cereal grains in nine Asian countries, and they studied whether urbanization affected consumption patterns. The primary objective of this study was to determine the extent to which the rate of urbanization affected the patterns of cereal grain consumption in the Asian countries. The Almost Ideal Demand System is used for capturing the effects of urbanization on demand for cereal gains in Asian countries. The demand system is estimated in two stages. The first stage consisted of two broad groups, cereals and non-cereals groups, which included all other commodities beside cereal grains. This study only focused on cereals grains, therefore the commodity group of non-cereal items was omitted and only the equation for cereal grains was estimated. The second stage consisted of only cereals grains, which included rice, wheat, and coarse grains, where coarse grains included barley, corn, rye, millet sorghum and other mixed grains that differed by country. The authors used Seemingly Unrelated Regression (SURE) to estimate the equation system. This study concluded that, the majority of elasticities displayed the expected signs. Urbanization had a negative effect on consumption of rice and coarse grains, but positive effect on wheat consumption. They had noted that in high income countries non-cereal items increased in consumption as urbanization occurred and consumption of cereals declined. The opposite held true for lower income countries where as, urbanization occurred, consumption of grains increased and the consumption of non-cereals items fell.
Chung Y. S. (1998) had made the comparison of consumption pattern of US and Korean households using household survey data. Data were cluster analysed, and the results revealed four different consumption expenditure patterns for US and Korean households. Logit analysis showed that consumption expenditure patterns of households in both countries were likely to vary depending on socio-economic factors. Similarities and differences in consumption expenditure patterns between cultures were discussed, and implications were provided.

Han, T. et.al, (1998) had estimated demand for Chinese fruits and vegetables for different income groups separately for urban and rural areas. The authors justified the need for estimating separate demand equations on the basis that consumption pattern for different income groups both in the urban and rural areas are likely to change differently with rise in income. The objective of this study was to provide separate estimates of price and expenditure elasticities for fruits and vegetables for different income groups both in urban and rural area. They used a two-stage budgeting LES-LA/AIDS approach for estimating demand. It was assumed that the consumer's utility-maximization decision can be estimated into two separate steps. The first step is the LES, Linear Expenditure System, which allows for total expenditures to be allocated across a broad group of commodities. Five broad groups are used in the first stage: food, clothing, housing, durable goods, and other items. The second step of this process has the expenditures allocated across individual commodities by using the LA/AIDS models. For the food groups the following individual commodities were included: grains, meat, other (stimulants, sweets, and cooking oils), leafy vegetables, root vegetables, other vegetables, dried vegetables, apples, grapes, other fruits and nuts, and others. The study concluded that China's rural households’ consumption behavior appears to be consistent with the two-stage budgeting system (Han and Wahl, 1998, 149). It showed that households in China prefer to allocate their expenditures across broad categories such as food, and then allocate the rest to specific items such as fruits and vegetables.

John A.L., Cranfield et.al. (1998) had estimated the impact of per capita income expenditure changes on food demand and had investigated the impact of projected per
capita expenditure and population growth on aggregate global food demand and then on disaggregate food product demand for the year 2020. They had used the An Implicitly Directly Additive Demand System (AIDADS) and the estimated two demand systems. For the estimation of two demand systems they had used a maximum likehood program developed by Cranfield et al. and a cross section sample of countries from 1985, International Comparisons Project (ICP). Authors had also investigated the impact of projected per capita expenditure and population growth on aggregate food demand and then on disaggregate food product demand in the year 2020. This paper concluded that if prices are held fixed, the effect of a small change in per capita expenditure on food’s budget share can be ascertained by examining the marginal budget share. The projected food budget shares declined in the countries like Ethiopia, Pakistan, Senegal, Korea, France and the USA as per capita expenditure increased. In particularly, it was observed that the large reduction in food budget shares in Korea and France but smaller reduction in countries with low per capita expenditure and the United States.

Huang K. S. and Lin Biing-Hwan (2000) had estimated Food Demand and Nutrient Elasticities from Household Survey Data of United States. The authors had developed a new approach for estimating demand elasticities by Almost Ideal Demand System Model from household survey data and applied this approach to the 1987-88 Nationwide Food Consumption Survey (NFCS) data to analyze food demands for households segmented into three income levels. They used estimated demand elasticities for low-income households as input information to generate the nutrient elasticities, which are useful in evaluating the effect of the food stamp benefit on nutrient availability. The demands for dairy, fruits, and vegetables were relatively more price elastic than those for other food categories, with elasticities ranging from -0.72 to -1.01, while estimated own-price elasticities for meat categories were -0.35 for beef, -0.69 for pork, -0.64 for poultry, and -0.39 for fish. The expenditure elasticities of fruits, vegetables, and juice were 1.16, 1.04, and .98 greater than those of other foods, while the estimates for bread, eggs, other meats, dairy, and cereals were less elastic, with elasticity estimates ranging from 0.58 to 0.68.
Weliwita A.et. al. (2003) had estimated price and food expenditure elasticities of demand for twelve food groups in Tanzania by applying the Linearized Almost Ideal Demand system. In estimation, particular attention is paid to the presence of zero expenditure and the effects of demographic characteristics on food demand patterns. The twelve food groups were aggregated from 142 food items. The twelve food items includes maize, rice, other cereals, pulses, milk and dairy products, sugar, edible oils, fish, starch, fruits and vegetables, meat, and other foods. The data for the analysis were taken from the household budget survey conducted between December 1991 and November 1992 by the Bureau of Statistics, the United Republic of Tanzania. The results indicate that maize, rice, other cereals, pulses, sugar, edible oils, fish, starch, fruits and vegetables, meat, and other foods are price inelastic while milk and dairy products have unitary elasticity of demand. Most of the food groups are income elastic. The results also reveal that household income and family size have significant effects on food demand patterns. Main policy implications of the results include inter alia (a) income oriented policies will have a greater effect on promoting food consumption than price related policies, (2) a significant price decline associated with increased production of maize and rice will benefit a majority of households since the two commodities have high budget shares and low own-price elasticities of demand, and (3) meat was found to be inelastic with respect to the expenditure on food.

Yanrui Wu (2004) had examined the international food consumption pattern. This paper was a part of the outcome of the project on the comparison of international food consumption patterns. The project was funded by an Australian Centre for International Agricultural Research (ACIAR) grant. The data on food consumption has been taken from various countries official publication. The ICP datasets have been compiled for the years 1970, 1973, 1975, 1980, 1985, 1990 and 1995. One of the main problems with international comparative studies is the choice of exchange rates so that national incomes expressed in local currencies can be converted and become compatible. The author had adopted the concept of the purchasing power parity (PPP) and hence employed the conversion ratios of local currency over international dollar estimated by the World Bank. The same ratios are also used to convert household expenditure data. To examine
the effect of income and country-specific factors on food consumption across countries, a set of Engel functions are estimated. This study concluded that as income rises, an average country in the world tends to spend proportionally less on food and its demand for food becomes less elastic too. This trend is however not very clear if the focus is the regions instead of income groups. At the disaggregate level, most food items (e.g., cereals, meats, fruits and vegetables, dairy products and oils and fats) are found to be necessities. Aquatic products, alcoholic and non-alcoholic beverages however appear to be luxuries for most countries with the exception of the high-income ones. Income elasticities of demand in South Asia are found to be high for all food items except cereals and dairy products. In contrast to South Asia, dairy goods account for a small budget share in East Asia. It is also found that the Chinese diet mainly consists of cereals, meats, aquatic products, and fruits and vegetables. There are however considerable variations among the regions in large countries such as India and China. Regional issues can only be addressed by conducting detailed studies using household or regional data.

Carrasco R. et.al. (2005) had examined the presence of habit formation in consumption decisions using household panel data Span. They had used the fixed effect model for captured the effects of time invariant unobserved heterogeneity across households when testing for the presence of habit formation in preferences. They had used data from the Spanish Continuous Family Expenditure Survey (Encuesta Continua de Presupuestos Familiares, ECPF). The Results of the fixed effect model confirmed the importance of accounting for fixed effects when analyzing consumption decisions allowing for time non-separabilities.

Tasciotti L. (2007) had estimated the complete system of demand equations using household budget data and examined the effect that demographic variables have in family expenditure choices in Italy. This demand system is Almost Ideal Demand System (AIDS), which is estimated using a set of 7 different categories of items, 5 food and non-food. The major objective of this study is to study the expenditure pattern in Italy and examine which were the factors that mostly influenced Italians’ purchases. Data used in the this study had referred to a sample composed of approximately 8,300 Italian families.
gathered over 85 years period, between 1875 and 1960. The final results of this study shows the importance of cereal and vegetables in every day’s diet; meat and fats, for what regards food, and clothing, for the non food category, were perceived as luxury goods. Budget shares for food categories decrease with the family enlargement thus confirming the ‘food puzzle’ paradox. An extra adult increases the share of cereal purchase, an extra child does not increase the share of money spent on food denoting a distinct diet profile for family members of different age.

Sheng T.Y. et.al. (2008) had applied the Linear Approximate Almost Ideal Demand System Model (LA/AIDS) on Household Expenditure Survey 2004/2005 data of Malaysia. The main objective of this study is to build a complete demand system of food in Malaysia via Linear Approximate Almost Ideal Demand System (LA/AIDS), with incorporation of the Stone price index and the Laspeyres price index respectively. The empirical results show that the application of the Laspeyres price index produces more plausible estimates of expenditure and own-price elasticities in Malaysia. In the estimation of the LA/AIDS with incorporation of the Laspeyres price index, the estimated expenditure elasticities show that demands for meat (1.4064), fish (1.2440), vegetables (1.1729), and fruits (1.0905) are likely to grow faster than other traditional main calorie sources-rice (0.9091) and bread & other cereals (0.3177) in corresponding to positive income effect in future. This study shows that as Malaysian society becomes more affluent, Malaysian consumers are increasingly seeking for higher value protein based products, as well as functional healthy foods.

Asogwa B.C. and Umeh J.C. (2011) had examined the relationship between income and expenditure among the Nigerian small scale farmers using the Disaggregated Engel function analysis. The Data were collected mainly from primary source which collected from smallholder farmers in Benue State, Nigeria through the use of structured questionnaires that were administered to the selected 224 small scale farmers in Benue State. The study showed a direct relationship between total income and the respective disaggregated expenditure group, indicating that increase in total income would lead to increase in aggregate expenditure and hence increase in the respective disaggregated expenditure group. This implies that increase in total income would lead to a
corresponding increase in the expenditure on basic needs of the small scale farmers in Nigeria thereby improving the level of their welfare.

Summary
The literature discussed here gives a clear picture that the analysis of demand for food is central position for policy framework. Demand for food items is affected by various factors like total expenditure, relative prices, substitutes and complementary products prices, consumer taste and preferences etc… The consumption pattern is different in the rural and the urban areas. In India, the majority of the study related to consumption pattern was based on Monthly Per Capita Consumption Expenditure data collected by NSSO. The common conclusion of the Indian studies is that the per capita consumption on cereals and pulses has declined over time. The expenditure elasticities of majority of food items were noted to be elastic.

In many of the mentioned above studies, the demand analysis was done by the two models namely Linear Expenditure System (LES) and Almost Ideal Demand System (AIDS). These models are also widely used by various foreign authors to capture the magnitude of factors which has affected on demand of the particular products. It is also noted that the very few studies had used the panel regression approach to calculate expenditure elasticities of various food items. In India, the majority of studies about the consumption pattern of food were done at aggregate level and for over all classes of consumers. So, it will be is interesting to study the consumption pattern of various food items at India level and for specific state also. Even the demand projection of these various food items at all India level and for specific state for different classes of consumers is essential for policy frame work. The present study is a modest attempt in that direction.