Chapter 1

Introduction
Introduction

1.1 INTRODUCTION

An important manifestation of declining fertility and mortality improvement is the age structure transition as the need for specific goods and services are determined by age composition of population. In many countries demographic transition is accompanied with rapid urbanization, rural to urban migration, economic growth and even the socio-cultural orientation. At the micro level declining fertility and mortality affect household size and age composition. Household age composition further has implication on the pattern of intra-household allocation of expenditure. Thus age plays important role in economic, social, and demographic behaviour of households and population at large. Adolescents, adults in mid-life, and adults in retirement, depict considerable differential in expenditure behaviour.

The relation between age and consumption pattern or other economic behaviour is somewhat obscured by the fact that age may operate differentially on various groups of the population. For example, age has different connotations for households with married couples than for households without them. It has been noted that household preferences change slowly with the age of the members considered as consumer units. The ages of children in the family are clearly related to specific types of consumption, such as, food, clothing, and education. In a short period of time aging of children will induce changes in the preferences of the household, especially for non-durable goods. For adults age is less clearly tied to specific items of consumption. However, preferences may change abruptly at critical
ages: the age at which persons can legally drive automobiles and the age at which younger members of the family leave home and form a new household unit (David, 1962).

An imperative question in economics is whether changes in the age structure of the population affect consumption (Erlandsen & Nymoen, 2008). The influence of age on consumption has been studied by Wharton School (University of Pennsylvania, USA, 1960) and the study indicates that age has a significant influence on the expenditure of a number of commodities. Rogers and Green (1978) using 1972-74 consumer expenditure survey in America have enumerated how overall food expenditures have changed and identified the relationships between such expenditures and selected socio-economic factors. Their study concludes that per capita food expenditures increase as the head of the family grows older till age 65 and there is a strong negative relationship between family size and per capita expenditures on all types of food consumption. Huang and Raunikar (1978) have studied the effect of variation in household age sex composition on food expenditure and concluded that food expenditure among the youngest children were substantially lower than those of the adults. In yet another study in India, Gupta (1973) has found that in the rural and urban areas of Tamil Nadu and Uttar Pradesh, households with young members especially are spending the maximum amount on non-food items than the households with middle aged and old aged members. He concluded that the influence of the age composition of household members on consumer behaviour is different for various items of consumption in the four regions of Tamil Nadu and Uttar Pradesh. Important differences in the consumption of food grains and clothing were also found in these regions.
Gerbens, Nonhebel and Krol (2010) have studied food consumption pattern in 57 countries and concludes that for low income countries, Gross Domestic Product (GDP) increase is accompanied by changes towards food consumption patterns with large gaps between supply and actual consumption. They have also found that continuation of present economic trends might cause significant pressure on natural resources, because changes in food demand occur much faster than in the past, especially in Asia. Many studies have highlighted that there is a positive correlation between GDP of a country and the health care expenditure (Milne & Molana 1991; Newhouse, 1977). Kiymaz, Akbulut and Demir (2006) have examined the long-run relationship between the per capita private, public, and total health care expenditure and per capita GDP and population growth for Turkey and revealed that there is statistically significant bivariate cointegrating relationship between the private health expenditure and gross national product. Barro (1991) has found a positive association between education expenditures and economic growth. Benhabib and Speigel (1994) find evidence that education influences the rate of technological progress.

MacDonald and Hopkins (2002) and Gerdtham and Lothgren (2000) have analysed the unit root properties of health care expenditure and GDP for OECD countries and conclude that both health care expenditure and GDP are non stationary, and there exist a cointegrational relationship between health care expenditure and GDP. Using time-series analysis, Musila and Belassi (2004) have investigated the relationship between government education expenditure per worker and economic growth in Uganda during the period 1965-1999 and confirmed that expenditure on education
per worker has a positive and significant impact on economic growth both in the long run and short run.

1.2 LITERATURE REVIEW

According to Brown and Deaton (1972), family composition is considered to be the most important variable influencing family expenditures for goods and services. Wagner and Hanna (1983) have used expenditure data of the 1972-1973 Consumer Expenditure Survey (CES) in U.S. to test the effect of family life cycle variables on expenditure and conclude that family composition significantly affect expenditure pattern. Analysing National Sample Survey Data for India, Iyengar (1967) has revealed that for a meaningful study of consumer behaviour the factors like education, age, region, occupation etc. should be included in the demand function. By analysing Norwegian quarterly time series data, Erlandsen and Nymoen (2008) have found that changes in the age distribution of the population have significant and life-cycle consistent effects on aggregate consumption. Furthermore, controlling for age structure effects they established association between consumption behaviour and real interest rate. From a survey in USA, Fair and Dominguez (1991) have found that prime-age people consume less relative to their income than persons in other age groups. As argued by McMillan and Baesel (1990) the ratio of ‘prime-savers-aged’ persons to the rest of the adult population may be a closer approximation to the life cycle ideal than the dependency ratio. The ‘prime savers’ are assumed to be of middle age and have relatively high earnings at the same time as the size of their households are small; hence their needs are smaller than when they were young, and they are prone to start saving to secure quality of life after retirement. The middle aged persons may therefore have a lower propensity to
consume than both who are younger and older. Erlandsen (2003) has indicated that it is the age group of 50-66 year old persons has the smallest average propensity to consume. Using panel data estimation to explore the most important contributors to socioeconomic health inequalities in Great Britain, Wildman (2003) has found that age and financial status are major determinants of ill health and both factors make a major contribution to income related inequality in health. In addition to the trends in the composition of household expenditure over time, analysing expenditure differences on the basis of household characteristics of Australia, The Productivity Commission (2012) has found that an ageing population is likely to result in increased consumption of goods and services favoured by the older age groups. They have also shown that medical care, health expenses and share of food is increasing for the elderly.

Using the Health and Retirement Study (HRS) data, Banerjee (2012) has analysed the change in the pattern of expenditure of the American elderly and found that health related expenses are the largest component in the budget of older Americans and is the only component which steadily increases with age. Mirel and Carper (2014) have analysed the Medical Expenditure Panel Survey Household (MEPS-HC) and Medical Provider Components (MEPS-MPC) data on the U.S. civilian noninstitutionalized population for the years 2001, 2006 and 2011 and found that the average annual expenditure per elderly person is about $1,000 higher in 2011 than in 2001. Newhouse (1992) assesses the relative importance of ageing in the increase in health expenditures per capita during the period from 1940 to 1990 in the United States. He finds that ageing, in the sense of an increasing proportion of population in the 65-plus age group, holding constant age-specific health
expenditures, explained 2 percent of the increase in per capita health spending during this period, a result confirmed by Cutler (1995). Using the consumption expenditure data, National Sample Survey, 2009-10, Mohanty, Chauhan, Mazumdar and Srivastava (2013) have tested the hypothesis that the monthly per capita household health spending of the elderly households is significantly higher than that of the non-elderly households in India and concluded that the monthly per capita health spending of the elderly households is 3.8 times higher than that of the non-elderly households. Ladusingh and Anamika (2013) too have found higher inpatient care costs of decedents that that of survivors in India. Lin (1978) has used 1961 Philippines household survey data to illustrate quantitatively how changing consumption levels and their commodity patterns in a country can be explained by demographic and economic variables. The study confirms that demographic and economic factors like household size, rural to urban migration, household budget are the most important factors in changing consumption levels, accounting for about 72 to 79 percent of incremental food expenditure and about 61 to 64 percent of incremental non-food expenditure in the economy under alternative scenarios of projected economic-demographic conditions. The study also explores that not only are the demographic factors crucial in determining levels of consumption, but they are also significant in changing patterns of consumption.

Seshamani and Gray (2002) in their study have examined national age-specific expenditure trends for England and Wales, Canada, Japan, and Australia and calculated changes in age-specific per capita expenditure, population demographics, and the share of expenditures spent by the different age groups over time. Then they have determined the extent to which isolated changes in population growth,
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demographic shift, and changes in age-specific per capita expenditure could predict observed increases in health expenditure. They find that for Japan, Canada, and Australia, per capita health expenditure has increased fastest among those aged 65 and over, at up to twice the increase of ages 45 to 64. In the UK, on the other hand, those aged 65 and over experienced one-third of the cost increase of ages 45 to 64. Hence, the proportion of national health expenditures allocated to the population aged 65 and over has decreased from 40 percent to 35 percent in the UK, while increasing in the other countries by up to 10 percentage points.

According to Lubitz and Riley (1993) health care costs for persons in their last year of life reach a maximum at about the age of 70 years and fall with higher age, and health care costs for the group of survivors rise until the age of about 85 years, reach a maximum and fall with higher age. Fuchs (1984) is the first to point to the fact that the relationship between age and health care utilization or costs is biased by the fact that the percentage of persons in their last year of life (which costs well above average) is increasing rapidly with age. He hypothesized that if mortality in all age groups above 65 years were assumed to be constant, health care costs with age would also be constant. Dormont, Grignon and Hubber (2006) have used micro data for France for years 1992 and 2000 to evaluate that individual health care expenditure is an increasing function of age and conclude that average individual health care expenditure increases as age increases. Utilising data from the 1987 National Medical Expenditure Survey (NMES) and the 1996 Medical Expenditure Panel Survey (MEPS), Selden and Banthin (2003) have found that health care expenditure is high and is a burden among the old age people. There is also concern that an ageing population would have large effects on health expenditures, both
public and private, with obvious consequences for public budgets and private expenditures (Fuchs 1998).

Demery and Duck (2006) have used Family Expenditure Survey, an annual cross-sectional survey of around 7,000 UK households to analyse the consumption behaviour and age structure of households and individuals for 30 consecutive calendar years (1969-1993). They conclude that household data exaggerate savings rates of young adults and the elderly whilst underestimating those of 45 to 60 year olds, and individual saving rates follow more closely the 'hump shape' of the life-cycle model, although the savings rates of the elderly remain positive for some ages. Using the NCAER survey data on Human Development in rural India (HDI) (1994), Tilak (2002) has studied the extent of household expenditure on education by different groups of population, the elasticity of household expenditure on education to changes in household income on the one hand and government expenditure on education on the other hand and the determinants of family expenditures on education. Among the determinants of household expenditures, household characteristics, particularly household income and the educational level of the head of the household are found to be important.

Chaudhuri and Roy (2006) have used the data on education from the Living-Standard Measurement Survey (1997) to examine the gender gap in educational expenditure in two states of north India and they confirm that there are significant gaps in the educational expenditure between girls and boys within the family unit. The study has also found that size and extent of the gap differ across the age group of children.
1.3 NEED OF THE STUDY

Since the inception of Five-Year Plans in India, the incomes of the people have increased considerably. This has resulted in a higher demand for different commodities. This might have also caused a readjustment in the demand for different goods. All these developments necessitated a study of consumer behaviour in India. The availability of data on household consumption on a nation-wide basis in various years supports the interest in consumer study. However, in the twentieth century the growth of population in India became faster after the independence. With the changing pattern of population growth the age and sex distribution has also been changing by decades. Along with the change in age and sex distribution, consumption of goods and services is also changing which has a significant impact on nation’s economic growth (Garbens, Nonhebel and Krol, 2010; Kiymaz, Akbulut and Demir, 2006; Musila and Belassi, 2004). Kleiman (1996) in his study, has argued about the effect of age composition on per capita income by giving a simple example that two persons of widely differing physical dimensions. However, with respect to all items consumed, such differences do not lead to any systematic association between them and income. Again he pointed out that the same cannot be said of the consumption differentials associated with age. To satisfy the same need in food, clothing, etc., a child’s requirements are, on the whole, lesser than that of an adult. Consequently, the same per capita income represents a higher standard of living for a population consisting largely of children than for one consisting mainly of adults. According to Kleiman (1996), the rise of per capita income over time is accompanied by a decrease in the share of the younger age groups in the population. Economists have long been aware that there are lifecycle patterns in earnings and consumption. If income is examined by age group, one finds a steady
increase in earnings from one’s early twenties up into one’s late fifties, and then a steady decline as individuals retire and live on reduced incomes. Consumption patterns can likewise exhibit variations due to changing income and age effects. What is often ignored in life-cycle studies is the generational effect on earnings and consumption. In a growing economy, individuals of a younger generation will generally be better off at a given age than were individuals of an older generation. This age effect can also be responsible for differences in tastes and preferences, and therefore different spending patterns.

Again habits and social customs are not same in all the parts of India. Subramanian (1995) have applied the outlay equivalent technique for adult good, educational and medical expenditure for rural areas of five Indian states: Andhra Pradesh, Maharashtra, Punjab, Rajasthan and Tamil Nadu. He found gender discrimination for goods in Andhra Pradesh and Maharashtra in 5-9 age group. For educational expenditure the author noticed gender discrimination in Andhra Pradesh and Rajasthan in 10-14 age groups. Whereas in Rajasthan among 0-4 age group and in Punjab among 0-4, 5-9 and 10-14 age group evidences of gender discrimination in medical expenditure was found. Similarly, different regions do not exhibit the same household characteristics and the level of per capita income and total expenditure are not same among each region. For example, households living in the same region are exposed to the same historical, social, economic and environmental factors. Bono, Cuffaro and Giaimo (2007) have evaluated the region wise disparities in consumption behaviour of the Italian households and confirmed that consumption behaviour differs from region to region according to the distribution of income within each region. Howell and Mclaughlin (1989) have used the data of 1917
collected by Bureau of Labour Statistics at America and examined the regional variation in health care expenditure. Their finding indicates that there was a significant variation in medical expenses among nine census bureau regions. Yet in another study Aydin (2006) has tried to analyse whether there are difference in consumption practices between social classes in Turkey and concluded that the social class variables like income, education, occupation and region have significant impact on the consumption of different items.

The effect of population aging on consumption is becoming an increasingly important area of concern to economists and public policy makers. The elderly population is increasing not only in absolute numbers, but as a share of the total population in the most of the countries in the world. The shift in the age distribution of the population is likely to result in a significant change in expenditure patterns of India’s population as a whole. The relative share of expenditure by elderly consumers will also increase due to the fact that the proportion of elderly consumers is rapidly increasing. It is important to recognize differences between expenditures of the elderly, the adults and children over time in order to establish appropriate public policies to help elderly consumers. If changes occur without being predicted and thus without appropriate public policies, shortages of goods and services needed by the elderly may occur.

For India a lot of change in socio-economic and consumer behaviour is taking place which has strong impact on consumerism. The attitude of Indian consumers has undergone a major transformation over the last few decades. Indians are changing their consumption pattern powered by growing income levels. From the above
reviews it is evident that various socio-economic and demographic factors have a strong effect on consumption pattern. The objective of the present study is to examine consumption pattern of different items particularly health and education by age and sex. An accompanying objective is to determine the effect of change in age-sex composition on the consumption pattern over time in India.

There are limited evidences of implication of changing household age-sex composition on consumption patterns measured by expenditure on various items. The study shall help in understanding how household size, age and sex composition are influencing change in household consumption pattern. The relevance of the study is to enrich empirical evidence of the relative effects of household characteristics on household consumption particularly on health and education expenditure. The findings from this study can provide key inputs for evidence based policy orientation and reallocate resources considering goods and services needed by evolving household size, age and sex composition.

1.4 RESEARCH QUESTIONS

In the light of the foregoing oration this study aims to answer some of the research questions-

- Does the household consumption expenditure pattern is changing over time in India?
- Whether the household consumption expenditure pattern is affected by household composition?
Are there any regional disparities in household consumption expenditure for different age-sex groups and does it change over time?

1.5 CONCEPTUAL FRAMEWORK

To answer the aforesaid research questions, analysis in this study based on the conceptual framework adopted from Arah, Westert, Hurst and Klazinga Health Care Quality Indicators model (2006) is shown in Figure 1.1.

Figure 1.1: Conceptual framework depicting relationship between demographic composition and household expenditure
1.6 OBJECTIVES

The proposed study will make an attempt to fulfil the following objectives-

1) To study the changes in household age-sex composition in India over the time and to evaluate its affect on the pattern of household expenditure over the period.

2) To study changes in the share of household consumption of food and non-food items and to examine how the change is associated with the change in household age and sex composition.

3) To assess the changes in level of household educational expenditure and to examine whether educational expenditure is changing with the change in household age and sex composition over the time.

4) To evaluate the changes in level of household health expenditure and to verify whether health expenditure is changing with the change in household age and sex composition over the time.

5) To ascertain the relative effects of household age and sex composition on household consumption in different regions over the time.

1.7 PROPOSED HYPOTHESES

On the basis of the above mentioned objectives and review of literature, the following hypotheses are proposed to test in this study.

Hypothesis 1

Expenditure on food and non-food items is not associated with household composition.
Hypothesis 2
Educational expenditure is invariant of changing household composition.

Hypothesis 3
There is no linkage between health care expenditure and changing household composition.

Hypothesis 4
There is no regional disparity in household consumption expenditure for food, non-food, educational and health care expenditure.

Hypothesis 5
There is no regional disparity in the association between age-sex structure and household consumption expenditure.

1.8 DATA AND METHODOLOGY

1.8.1 Data
Various rounds of National Sample Survey (49th round, 1993; 55th round, 1999-2000 and 64th round, 2007-08) on household consumer expenditure are employed to fulfil the objectives of the present study. The National Sample Survey Organisation (NSSO) conducts regular consumer expenditure surveys as part of its rounds, each round being normally of a year's duration and covers more than one subject of study. The surveys are conducted through household interviews, using a random sample of households covering practically the entire geographical area of the country. The sampling designs adopted in all the rounds of NSSO surveys are
multi-stratified sampling and are comparable. The household consumer expenditure schedule used for the survey has collected information on quantity and value of household consumption with a reference period of last 30 days for most items of consumption (including all food items) and last 365 days for some less frequently purchased items.

A very detailed item classification is adopted to collect information, including 146 items of food, 15 items of fuel, 28 items of clothing, bedding and footwear, 22 items of educational and medical expenses, 52 items of durable goods, and about 92 other items. The food items include cereals, cereal substitutes, pulses and pulse products, milk and milk products, edible oil, meat, egg, fish, vegetables, fresh and dry fruits, sugar, salt, spices and beverages. Items of expenditure on education comprise books, newspaper, library charges, stationeries, tuition fee and other items and the information are collected for a reference period of 365 days. Items of expenditure on institutional health care includes medicine, X-Ray, ECG, pathological test, doctor’s/surgeon’s fee, hospital and nursing home charges and other medical expenses and the information for these items are collected for a reference period of 365 days as well as non-institutional health care expenditure are collected for a reference period of 30 days.

The non-food items include pan, tobacco, intoxicants, fuel and light, cloth, footwear, miscellaneous consumer goods and services (all consumer services including conveyance, rent, and consumer taxes and cesses); and durable goods. Durable goods include furniture and fixtures, “entertainment” durables such as radios, TV, VCR/VCP/DVD players, tape recorders and CD players as well as audio/video
cassettes and CDs, cameras, musical instruments, jewellery and ornaments, crockery and utensils, cooking and other household appliances such as fans, air conditioners, air coolers, sewing machines used for household work, washing machines, stoves, pressure cookers, fridges, water purifiers, electric irons, heaters, toasters and ovens, household transport equipment including two-wheelers, four-wheelers and their parts, therapeutic appliances, clocks, watches, computers for household use, mobile phone handsets, and bathroom and sanitary equipment. Expenditure on cloth, footwear and durable goods are collected for a reference period of 365 days. The schedule also has collected some other particulars of each household member, such as age, sex, marital status, caste and educational level.

Census data for 1991, 2001 and 2011 are used to get information regarding the age and sex composition and socio-economic structure of the population over the time. Data from Indiastat.com is also employed to fulfil the objectives. The research is based on a sample of 29995, 120309 and 50297 households with 149826, 600016 and 242369 individuals for the period 1993, 1999-00 and 2007-08 respectively. For the first survey out of the 149826 individuals 77912 are male and 71914 are female. For the second and third survey the data sets are comprise of 311081 male and 288935 female and; 125146 male and 117223 female correspondingly.

1.8.2 Methods

Expenditure data for the year 1999-00 and 2007-08 are first adjusted to the price of 1993 considering 1993 as base year. Expenditure on the items whose reference period is 365 days are converted to a reference period of 30 days for comparing the expenditure pattern over the period as in the first survey the reference period for
most of the items is 30 days. The total household expenditure is calculated by adding the expenditure on different items for last 30 days prior to the survey for each survey period. In the entire thesis the age of the individuals are divided in to three groups as 0-14 (children), 15-59 (adults) and 60 & above (elderly). As the information of expenditure on all items is given for households, to examine the change in the pattern of expenditure with the change in age-sex composition, household expenditure is first allocated to household members by age using regression approach.

CHAPTER 2

Descriptive statistics, bivariate analysis and diagrammatic representation are used to describe the change in pattern of household expenditure over time. To examine the change in the pattern of expenditure with the change in age-sex composition, household expenditure is first allocated to household members by age using regression approach. The basic methodology adopted for understanding the change in age-sex composition is independent of the time period is based on analysis of test of partial association. Inequality measures (Moorey and Pacey, 2002) are used to analyse the change in household expenditure between age groups over time. The second indicator is log variance, is adopted to assess the change in household expenditure between age groups over the period.

CHAPTER 3

The total household food expenditure is calculated by adding the expenditure on different food items for last 30 days prior to the survey for each survey period. The food items include cereals, cereal substitutes, pulses and pulse products, milk and
milk products, edible oil, meat, egg, fish, vegetables, fresh and dry fruits, sugar, salt, spices and beverages. Likewise, the non-food expenditure is calculated by adding pan, tobacco, intoxicants, 15 items of fuel, 28 items of clothing, bedding and footwear, 52 items of durable goods, and about 92 other items.

Descriptive statistics, bivariate analysis and diagrammatic representation are used to describe the change in pattern of household food and non-food expenditure. To examine the change in the pattern of expenditure with the change in age-sex composition, household food and non-food expenditure is first allocated to household members by age using regression approach. The methodology adopted to examine the association between age-sex composition and food and non-food expenditure is Linear regression. Secondly Juhn, Murphy and Pierce (JMP) two-fold decomposition method is employed to show the change in age-sex difference in food and non-food expenditure over time.

**CHAPTER 4**

According to government education system in this chapter the age is divided in to five groups following 6-11 as primary school going age, 12-13 as upper primary going age, 14-15 for secondary educational group, 16-17 for higher secondary group and 18-34 for higher educational group considering the fact that children are enrolled in primary school at age 6 and up to age 34 maximum individuals complete their higher education. Information on educational expenditure (expenditure on books & journals, newspaper & periodicals, library charges, stationery, tuition and other fee (school, college etc.), private tutor/coaching centre and other educational
expenses) for the last 365 days prior to the survey is accumulated by NSSO for the periods 1993, 1999-00 and 2007-08.

Educational expenditure is calculated by combining all the above expenditure for the last one year. Descriptive statistics, bivariate analysis and diagrammatic representation are used to describe the change in the pattern of educational expenditure. As for the allocation of household educational expenditure to individual members by age a Linear form of Engel function is used to determine the individual age and sex wise educational expenditure in all the survey periods. Difference in the distribution of household educational expenditure between different age-sex groups over time is measured with the Theil decomposition Indices.

CHAPTER 5

Expenditure on household medical institutional goods and services (medicine, X-Ray, ECG, pathological test, doctor’s/surgeon’s fee, hospital and nursing home charges and other medical expenses) are collected for the last 365 days prior to the survey, while expenditure on medical non-institutional goods and services (allopathic medicine, homeopathic medicine, ayurvedic medicine, unani medicine, other medicines, X-Ray, ECG, pathological test, doctor's/surgeon's fee, family planning appliances and other medical expenses) are collected for last 30 days prior to the survey by NSSO for 1999-00 and 2007-08. However, both the medical institutional and non-institutional expenditure are collected for last 30 days for the period 1993. Hence to calculate health expenditure, the institutional medical expenditure in last 365 days are converted to the expenditure in last 30 days for the
periods 1999-00 and 2007-08, and both Institutional and non-institutional medical expenditure are combined for all the surveys.

Health expenditure data for the year 1999-00 and 2007-08 are first adjusted to the price of 1993. Descriptive statistics, bivariate analysis and diagrammatic representation are used to describe the change in the pattern of health expenditure. As for the allocation of household health expenditure to individual members by age a cubic polynomial regression is adopted. Linear regression analysis is adopted to examine the association between the predictor variables and health expenditure. A multivariate decomposition analysis is used to study whether the shift in demographic composition has made significant contribution to overall change in health expenditure.

CHAPTER 6
In this chapter all the states of India are first divided into six regions like eastern, western, central, northern, southern and north eastern region. To calculate the change in region wise population composition and household expenditure pattern on different items over time, univariate, bivariate analysis and diagrammatic representation are adopted. To study the effect of regions on expenditure pattern among different age groups a two-level Random Intercept Model is employed which has provision to integrate variation in health, education, food and other expenditure by states considering individuals, and states as the innermost to outermost levels in the hierarchy of analysis for each age groups. The state level variables used in multilevel analysis are percapita state gross domestic product, government percapita health care expenditure and literacy rate.
1.9 ORGANIZATION OF THE THESIS

The entire thesis has been divided into eight chapters including with the summary, conclusion and recommendations. The content of the chapters can be briefly summarized as-

Chapter 1: Introduction

This chapter provides introduction of the study undertaken in the thesis, review of the previous studies, need of the study, research questions, the conceptual framework, objectives of the study, the proposed hypotheses, and the organization of the thesis at a glance. The chapter also describes and discusses in detail the different sources of data mentioning type of household survey, information collected at household and individual level, methodologies adopted in each chapter.

Chapter 2: Changing Household Age-Sex Composition and Expenditure Pattern

This chapter examines the changing pattern of age-sex composition in India. The chapter also attempts to find whether the change in age-sex composition has association with the changing household expenditure among children, adults and elderly.

Chapter 3: Changing Household Age-Sex Composition and Food & Non-food Expenditure Pattern

This chapter attempts to study the change in the share of household food and non-food expenditure over time. It examines critically the change in the household
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distribution of food and non-food expenditure among children, adults and elderly male and female with the change in their proportion during 1993 to 2007-08.

Chapter 4: Changing Household Age-Sex Composition and Educational Expenditure Pattern

This chapter deals with the change in the share of household educational expenditure during 1993 to 2007-08. The chapter also investigates the association between changing age-sex composition of population belong to primary, upper primary, secondary, higher secondary and higher educational levels and changing pattern of household educational expenditure.

Chapter 5: Changing Household Age-Sex Composition and Health Expenditure Pattern

The emphasis of this chapter is on household expenditure on healthcare and attempts to find whether the changing age-sex composition over time determines the household health care expenditure.

Chapter 6: Changing Household Age-Sex Composition and Expenditure Pattern in Different Regions of India

This chapter studies the change in age-sex structure by regions during 1993 to 2007-08 and examines the implication of the regional differential on household expenditure pattern across the regions in India.
Chapter 7: Summary, Conclusions and Recommendations

This chapter summarises the key findings of each chapter and provides conclusions of the study. Few policy recommendations are made based on the findings. It also discusses some of the limitations associated with this study. Finally the chapter concludes by highlighting the scope for future research in this area.