Dynamics of Ageing Population and Its Multidimensional Aspects: An Analytical Study with Special Reference to Undivided Kamrup District of Assam

Thesis submitted to Gauhati University for the degree of Doctor of Philosophy in the Department of Economics

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CERTIFICATE

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He has fulfilled all the requirements of Ph.D. regulations and no part of this thesis was submitted to any other University/Institutions for any research Degree.

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Declaration of the Candidate

I am to declare that this thesis entitled Dynamics of Ageing Population and its Multidimensional Aspects: An Analytical Study with Special Reference to Undivided Kamrup District of Assam, is carried out by me under the guidance of Professor Runumi Dowerah Baruah, Department of Economics, Gauhati University, for the award of the Degree of Doctor of Philosophy in the Faculty of Arts (Economics). The findings embodied in the thesis are the records of the bonafide investigation conducted by me in the Undivided Kamrup District, Assam.

I further declare that neither this thesis nor any part of it has been submitted before for any degree or diploma in anywhere/elsewhere.

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Finally, I alone take all responsibilities for any error or omission of this dissertation.

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Chapter -1

1. Introduction

One of the prominent global demographic events of 21st century is population ageing. It is a demographic phenomenon in which the share of aged population increases in total population with a simultaneous decrease in the share of population of younger ages. In other words, population ageing refers to the increasing proportion of old people within a population. This process is related to both fertility and mortality rates. Continuing fall in birth and death rates lead inevitably to a growth in the proportion of elderly people in the total population. In understanding old age, two factors appear to be mutually distinct but nevertheless interdependent. They are, physical ageing and social ageing. Physical ageing is associated with changes in the physiological conditions of a person and social ageing is administratively determined for purposes of social security, retirement from jobs in the organized sector, or for demographic classification, its consequences on the individual and the community.

In the last two decades in the twentieth century, the subject of old age and ageing has 'come of age'. Though the problem of ageing is initially experiencing by developed countries, the process has recently apparent in much of the developing counties as well. 'It was in the year 1972 that the economic and social council of United Nations deliberated on this issue at length for the first time. It took ten years to convene the first world assembly on Ageing that was held in Vienna from 26th July to 6th August, 1982. In 1992, the UN General Assembly decided to observe 1st October as the" International Day and 1999 as the International year of older persons" (Atal,2001).The Madrid

International Plan of Action, adopted at the Second World Assembly on Ageing, emphasized that older persons should be able to participate in and benefit equitably from the fruits of development to advance their health and well-being, and that societies should provide enabling environments for them to do so (U.N ,Ageing population Report, 2015).

1.1. Definition of Ageing:

For proper understanding of the concept of ageing population, it is better to have a glance on some of the definitions of population ageing.

"Ageing of population refers most commonly to an increase in the relative proportion of the elderly in the population. The widely used cut-off point of 65 was decided as the age benefit in the first public social security legislation in Germany in 1873 and perpetuated in the retirement regulations of other countries.(Davies, 2003**)** Generally in most of the developing countries, 60 years is considered as the cut off a age for ageing (Myers, United Nations, 2001).

Central Statistical Office (2011) describes population ageing as- "ageing of population is affected due to downward trends in fertility and mortality. Low birth rates coupled with long life expectancies, push the population to an ageing humanity".

World Health Organization defines ageing as a set of biological processes that are genetically determined. Ageing is progressive generalized mutilation of function resulting from adaptive reactions to stress and age allied functional loss, disease and disablement.

In India, the age retirement varies from 55 years to 65 years. The Indian Census has adopted "the age of 60 years for classifying a person as old " (Muttagi,1997).

In most of the gerontological literature, people above 60 years of age are considered as 'old' and constitute the 'elderly' segment of the population (Dandekar, 1986).

According to Chanana, H.B. and Talwar, P.P. (1987) - “the sharp decline in mortality since 1950 and a steady recent decline in fertility has contributed to the process of population ageing in India”.

According to McDonald, P. and Kippen, R. “as fertility and mortality rates fall, population age”.

Weil, David N. (2006), “An increase in the population’s mean or median age, a decline in the fraction of the population composed of children, or a rise in the fraction of the population that is elderly are all aspects of population ageing”.

As per Knodel, J. (1999) “the relative share of persons at older ages increases and the share at younger ages decreases. This is distinct from absolute increase in the number of older persons, which can occur even if their share does not increase”.

Prakash, I. J. (1999) - “Population ageing involves a shift from high mortality and high fertility to low mortality and low fertility and consequently an increased proportion of older people in the total population”.

Bloom, D. E., Canning, D. and Fink, G. (2011) “ ageing as a combined effect of past variations in birth rates and death rates, decrease in fertility rates and increase in the life expectancy rates”.

Mirkin, B. and Weinberger, M. B. - “an unavoidable effect of the demographic transition and the shift to lower fertility and mortality from their higher rates has been the progression in the age structure of the world population”.

According to Jackson, R. and Howe, N.(2008) “population ageing is the dramatic transformation in population age structure and growth rates, being brought about by falling fertility and rising longevity worldwide”.

Karkal, M. (1999) “Decline in the fertility rate and therefore in the share of the young, ageing occurs at the base and with improvements in the chances of survival and therefore in the life expectancy, the share of the older population rises and there is ageing at the apex. The base and apex ageing takes place simultaneously though the contributions of these two vary depending on the changes on birth and death rates”.

From the above definitions, it can be explained that ageing is the result of the fall in fertility and the mortality rate in the population. Besides fall in fertility and mortality, migration is also considered as the third factor to have a positive effect on population ageing but international migration is not as much important in population ageing as fertility and mortality rates (Lesthaeghe, 2000, United Nations).

1.2 Statement of the problem

The problem of ageing is a global problem in the sense that it is experienced by all the societies, but it’s magnitudes and manifestations are not the same everywhere. “What is common is the fact that extended longevity due to decline in death rate and falling fertility is the universal cause of the rise of the ageing population. This rise affects the demography of the labour market, patterns of consumption and production trends of savings and investment, priorities in public spending, and delivery of social services. But this similarity ends there. Just how each of these areas will be affected will differ from society to society. As such there cannot be a single strategy for dealing with the problem of the aged. There can only be a common commitment” (Atal, 2001).

As with any other problem that has received worldwide attention, it is the negative aspect of ageing that has brought the issue in to sharp focus. The increasing cost of providing social services and benefits to the aged and the burden on the state exchequer for paying pensions for a longer period to the retirees has posed many problems.

The shift in age structure associated with ageing population has a profound impact on broad range of socio- economic and demographic conditions of the rural and urban society in India. For example, concerns are growing about the long term viability of inter generational social support system which are crucial for the well being of the older and younger generation. This is especially true where a provision of care within the family becomes more and more difficult as family size decreases. Women who are traditionally the main care giver increasingly engages in employment outside home especially in urban society. It has also been observed that though a higher life expectancy is an indication of an improvement in health conditions and living standards but prevalence of poverty, illiteracy, and general lack of amenities may constitute a major problem for elderly population in rural areas. Life becomes increasingly stressful due to ageing process.

Besides these, longevity can also result in medical cost and increasing demand for health services, since older people are more vulnerable to chronic diseases. Another important area that needs attention is that as more people live longer, retirement, pension and other social benefit tend to extend over longer periods of time. This makes it necessary for social security system to change substantially in order to remain effective in both the urban and rural life of the elderly people.

1.3 Global trend in Elderly Population

The number of elderly increased more than three folds since 1950 from approximately 130 million (about 4% of global population) to 419 million (6.9%) in 2000. The elderly population is now increasing by 8 million per year. By 2030, this increase will reach 24 million per year. In 2050 children would be 20.5% of the total while elderly would be 20.7% of the total. (Bose, 2000). Ageing is not only the problem of developed countries alone. Developing countries are also fast catching up in recent times. But in a recent study it is observed that the demographic transition to older population is growing fast in many developing countries of the world. The proportion of the elderly which was estimated around 7% in 1990 is growing to be more than 12% of the population of the developing countries. It is contended that demographic transition will proceed more rapidly in the developing regions than it did in the developed one's and will involve large absolute number. In the year 2025 there are projected to be 1.2 billion elderly populations in the world, 71% of them are likely to be living in developing regions. "More than half of the world's elderly by 2025, will be in Asia only" (U.N. Report, 1999, 2013, 2015).

UN Ageing Report (2013, 2015) says that globally, the number of older persons (aged 60 years or over) is expected to more than double (i.e., from 841 million people in 2013 to more than 2 billion in 2050). Older persons are projected to exceed the number of children for the first time in 2047. Presently, about two thirds of the world's older persons live in developing countries. Because the older population in less developed regions is growing faster than in the more developed regions, the projections show that older persons will be increasingly concentrated in the less developed regions of the

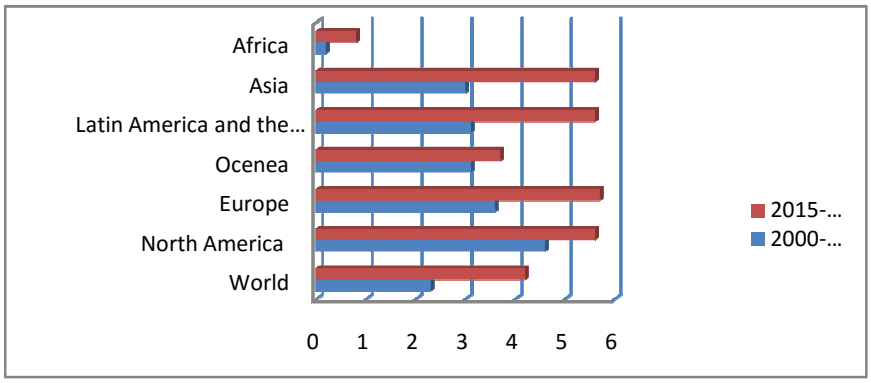
world. By 2050, nearly 8 in 10 of the population above 60 years will live in the less developed regions.

Another observation from the UN Ageing Report (2013, 2015**)** is that older population is predominantly female. Because women tend to live longer than men, older women outnumber older men almost everywhere**.** In 2013, globally, there were 85 men per 100 women in the age group 60 years or over and 61 men per 100 women in the age group 80 years or over. These sex ratios are expected to increase moderately during the next several decades, reflecting a slightly faster projected improvement in old-age mortality among males than among females.

The available statistical information presents a very interesting picture of population ageing in all over the world. In 1950 only three countries had more than 10 million people aged 60 years or older: China (42 million), India (20 million) and the United States of America (20 million). Fifty years later, the number of persons 60 or over, increased over three times to 606 million. In 2000, the number of countries with more than 10 million people aged 60 or over increased to 12, including 5 with more than 20 million older people: China (129 million), India (77 million), The United States of America (46 million), Japan (30 million) and the Russian Federation (27 million). Over the first half of the current century, the global population 60 or above is projected to expand by more than three times to reach nearly 2 billion in 2050. By then, 33 countries are expected to have more than 1 million people 60 or above, including 5 countries with more than 50 million older people: China (437 million), India (324 million), The United States of America (107 million), Indonesia (70 million) and Brazil (58 million). The older

population is growing faster than the total population in practically all regions of the world (United Nations, 2002a).

Fig: 1 Percentage change in the World Population Growth by Region, 2000-15 & 2015-30



Source: UN, 2015; world population prospect.

World population aged 60 years and above has been observed to increase during the period 2001-2015 by 2.3 per cent point (**Fig-1**). It is expected to increase by 4.2 percentage points during the period 2015-2030. However, estimated growth rate of population ageing, during the period of 2001-2015, has been faster (4.6 per cent) in the North American states and it increased by 4.6 per cent points and Europe (3.6 per cent points) (UN Report 2015). According to population projection estimates, the growth of population also expected to accelerate in all the six regions. The pace of population growth in Europe, North America, Latin America and the Caribbean and Asia was observed to be the same.

1.4 Ageing Growth Rate is faster than the Global Population

The share of aged people in the world as a whole is growing at a rate of 2.6% annually, whereas, global population is increasing at the rate of 1.2 % per annum (UN, 2015). In 1950-55, the annual average growth rate of total population and aged people (60+) is more or less same, the first one was 1.8% and the second one was 1.7%. In 2005-

2010, the above ratio became 1.2% and 2.6% respectively, that is, the growth rate of older person is more than double that of the population growth rate. This gap in between two types of growth rates will enlarge continuously in coming years and it is projected that in 2045-2050, the aged population growth rate (1.8%) will be 5 times more than the total population growth rate (0.3%). Looking through by absolute number, in the time period of 2010-2050, the global population is expected to increase by 2 billion whereas the proportion of elder people will increase by 1.3 billion at the same time period. In 1950, the global share of 60+ people was only 200 million or 8% of the total population which has increased to 760 million in 2011 and expected to increase to 2 billion by 2050. In percentage term this increase will be from 11% in 2011 to 22% in 2050. In 2045, it is projected that, the number of aged persons will exceed the number of children in the world as a whole.

Table 1.1
Past and Future (Projected) Population Profile of the World:1950-2100

Indicators	**1950**	**2000**	**2050**	**2100**
Total population (in Thousands)	2,525,779	6,127,700	9,550,945	10,853,849
Population Density	19	45	70	80
Median Age (years)	23.5	26.3	36.1	41.2
Child Dependency Ratio	56.7	47.9	33.8	29.8
Old – age Dependency Ratio	8.4	11	24.7	36.4
Annual Rate of Population Change (%)	1.8	1.3	0.5	0.1
Crude Death Rate per 1000 population	19.1	8.8	9.7	10.9
Infant Mortality Rate per 1000 live	135	55	18	8
Life Expectancy at Birth (years)	46.9	65.6	75.9	81.8
Crude Birth Rate per 1000 population	37.0	21.8	14.8	12
Total Fertility Rate	4.97	2.73	2.24	1.99

Source: United Nations Department of Economic and Social Affairs, Population Division, 2012

Table -1.1 shows that the world is ageing faster and the trend will continue till the last half of this century. Median age will increase from 23.5 years to 41.2 years in the period of 1950 to 2100; along with this, the life expectancy at birth will increase by around 35

years in this period. In the same period, the infant mortality rate decreases from 135 per 1000 live births to only 8 and total fertility rate decreases to 1.99 children per women from 4.97 children per women.

The oldest-old persons, that is, the persons aged 80 years or old is also increasing at a very high rate. At present, people aged 80 years or old is increasing at a rate of 4% per year. In every seven older person of age group of 60 years or old, there is closely one oldest-old person. Within 2050, this ratio will be 1 oldest-old person in every 5 older persons (UNDP, 2009).

1.5 Trends in the South Asian Perspective:

Table 1.2

Ageing in India in South-Central Asian Perspective:2000-2030

Country	Proportion 60+		Proportion 70+		Median (yrs)		Sex ratio+ in 2000	
	2000	2030	2000	2030	2000	2030	60+	70+
Afghanistan	4.7	5.5	1.5	1.8	15.6	20.1	98	95
Bangladesh	4.9	9.7	1.8	3.5	20.0	25.6	100	101
Bhutan	6.5	7.4	2.5	3.2	5.7	20.6	89.0	83.0
India	7.6	14.0	2.9	5.9	20.6	30.4	92.0	88.0
Nepal	5.9	7.8	2.1	2.9	15.9	20.9	97.0	91.0
Pakistan	5.8	7.8	2.1	3.2	15.8	20.8	100.0	98.0
Sri Lanka	9.8	21.5	3.9	9.2	26.9	39.2	99.6	100.0

Source: United Nations, 2001, World Population Prospects, 2000 (Revision).
Estimates were obtained from Dept. census and Statistics, 1993, Population Projections.

In **Table- 1.2**, ageing in South Central Asia population has been depicted. It is observed that there is an increasing trend of ageing population in these countries. Sri Lanka tops the table with 9.8 percent of elderly to their total population followed by India with 7.6 percent in the year 2000. In this region though Sri Lanka has highest elderly population but, in terms of absolute numbers India tops amongst the South Asian countries.

The striking difference in ageing population and the rapidity of ageing is witnessed in the median age in the South Asian countries. It is also observed from the table that as per projection by 2030, all the countries of South Central Asia including India will experience an increase in the proportion of the elderly population in the age group 70 and above.

1.6 Population Ageing in India

The global demographic trend as discussed above indicates that with the passage of time, the countries have experienced an increase in the ageing population. India, by no means, is an exception to this phenomenon. The UN defines a country as “Ageing Nation” where the proportion of people over 60 constitutes 7 percent to total population. India has exceeded that proportion (8.6 percent) in 2011. It is estimated by the U.N Population division that in the year 2028 India’s population will overtake China’s population. As India’s population grows, its expanding share of older population will also be notable. Currently, the growth rate of the number of older individuals (age 60 and older) is three times higher than that of the population as a whole (Giridhar, Sathyanarayana, 2014).

Dynamics of ageing in population is associated with multidimensional issues. In order to study the implications of the dynamics of an ageing population in India, there arises a need to understand the socio-economic, health and demographic profile of ageing population in general.

1.6.1 Demographic, Socio-economic and Health Profile of the Elderly in India

1.6.1.A Demographic Profile of the Elderly in India Size and Growth of Elderly Population

In India, as a result of the change in the age composition of the population over time, there has been a progressive increase in both the number and proportion of aged people. The Indian population has increased from 361 million in 1951 to 1.027 billion in 2001 and further to 1.21 billion in 2011. Simultaneously, the number of older people has increased from 19 million to 77 million and further to 103.8 million during the same time span (Registrar General of India, Census, SRS Statistical, 2011).

Table 1.3

Elderly population (60 years & above) in India (millions)

Year	Total			Rural	Urban
	Person	Female	Male		
1961	24.7	12.4	12.4	21.0	3.7
1971	32.7	15.8	16.9	27.3	5.4
1981	43.2	21.1	22.0	34.7	8.5
1991	56.7	27.3	29.4	44.3	12.4
2001	76.6	39.8	37.8	57.4	19.2
2011	103.8	52.8	51.1	73.3	30.6

Source : Population census Data.

It is seen from the **Table (1.3)** that there are 103.8 million elderly persons in India; according to 2011 census, 52.8 million females and 51.1 million males. It is also observed that up to Population Census 1991, the number of elderly males exceeded the number of females. In the last two decades, however, the trend has been reversed and the elderly females outnumbered the elderly males. As regards the rural urban division, area, more than 73.3 million persons of elderly population reside in rural area.

Percentage share of elderly population (60 years & above) to total Population in India

Table-1.4

Percentage share of elderly population (60 yrs & above) to total population in India : sex & place

Year	Male	Female	Total	Rural	Urban
1961	5.5	5.8	5.6	5.8	4.7
1971	5.9	6.0	6.0	6.2	5.0
1981	6.4	6.6	6.5	6.8	5.4
1991	6.7	6.8	6.8	7.1	5.7
2001	7.1	7.8	7.4	7.7	6.7
2011	8.2	8.4	8.6	8.8	8.1

Source: population Census data, India for 1961-2011,

The Percentage share of elderly persons in the population of India is shown in **Table 1.4.** it is observed that it has been ever increasing since 1961. It was 5.6 per cent elderly population in 1961 and the proportion has increased to 8.6 per cent in 2011.The trend is same in rural as well as in the urban area. In rural area, the proportion of elderly persons has increased from 5.8 per cent to 8.8 per cent while in urban area, it has increased from 4.7 per cent to 8.1 per cent during1961 to 2011. It has also been observed that the percentage share of the elderly to total population remained higher in rural area than in urban area for the corresponding years.

Decadal Growth:

Table-1.5
Decadal Growth in Elderly Population and General Population: India

	% Change in general population	% Change in Aged Population
1951-1961	+21.6	+23.9
1961-1971	+24.8	+33.7
1971-1981	+24.7	+33.0
1981-1991	+23.9	+29.7
1991-2001	+21.5	+25.2
2001-2011	+17.7	+35.5

Source: Census of India for 1951-2011

The growth in the elderly population can be attributed to the longevity of life achieved because of economic well-being, better medicines and medical facilities and reduction in fertility rates.

Table-1.5 shows that the decadal growth of the aged population (60 years and above) was more than the growth of the general population in India. Significant observation is that the percentage change in the growth of the aged has been observed more compared to the general population.

Percentage Distribution of Population by Broad Age Groups

Table: 1.6
Percentage distribution of population by broad age groups:India,1951-2011

Years	Age Groups			
	0-14	15-59	60+	Total
1951	38.4	56.1	5.5	100.0
1961	41.1	53.3	5.6	100.0
1971	42.0	52.0	6.0	100.0
1981	39.7	53.9	6.4	100.0
1991	37.6	55.7	6.7	100.0
2001	35.3	56.9	7.4	100.0
2011	30.8	60.3	8.6	100.0

Source: Census of India for 1951-2001,

Dividing the total population into three major age groups (i.e. age in years 0-14, 15-59 and 60 and above), it is evident that the proportion of children in the population (age 0-14 years) increased till 1971 but gradually decreased afterwards. It was 42 percent in 1971 and came down to 30.8 per cent in 2011 (**Table-1.6**).

The proportions of population in both the working-age-group (15-59 years) and the aged (60 years and above) have shown a tendency to increase. The proportion of the elderly people is ever increasing since 1951 and has reached to 8.6 per cent in 2011. The

working age (15-59 years) population is also increasing since 1971 and has reached to 60.3 per cent in 2011 (**Table-1.6**).

Table-1.7

Numbers and Proportion of the Elderly in the Indian Ageing Population by Age-Groups, 1961-2001

Age	Number (in millions)					(%)				
	1961	**1971**	**1981**	**1991**	**2001**	**1961**	**1971**	**1981**	**1991**	**2001**
60+	25	33	43	57	77	5.6	6	6.49	6.76	7.4
70+	9	11	15	21	29	2	2.1	2.33	2.51	2.9
80	2	3	4	6	8	0.6	0.6	0.62	0.76	0.8
90+	0.5	.07	0.7	1	n.a	0.1	0.1	0.1	0.2	n.a
100+	0.01	.0.01	0.01	0.01	n.a	0.02	.02	.02	0.02	n.a

Source: Census of India for the period 1961-2001

Table 1.7 shows the distribution of the elderly persons to the total population in India by age-groups during the years 1961-2001 in India**.** A consistent rise in ageing population (in all the age cohorts) was observed for the periods 1961-2001. The proportion of the elderly above 70 in the total population increased from 2 percent in 1961 to 2.9 percent in 2001. In 1961, the elderly population aged 80 years and above was 2 million and rose up to 8 million in year 2001. The proportion of the elderly with age 80 years and above was 0.6 percent in 1961and rose to 0.8 percent in 2001. The share of the elderly with age 90 years and above was 0.5 million in 1961 and the same was shot up to 1 million in 1991. It is observed that their proportion became double during the corresponding period (from 0.1 percent in 1961 to 0.2 percent in 1991).

Size of the elderly population (aged 60+) and their share in total population in States and Union Territories

It is observed from **Table-1.8** that Kerala is found to have the highest proportion (12.55) of the elderly population amongst the Indian states which is more than the National

average (8.6) while, Assam is having the 6.7 proportion of the elderly to the total population.

Table-1.8

Percentage of the Elderly Population (60 years & above) to the Total Population in Major States & Union Territories, India: by Sex and Place of Residence, 2011

State / UT	Elderly population to the total population	Females	Males	Rural	Urban
INDIA	**8.6**	**(50.8)**	**(49.8)**	**(70.6)**	**(29.4)**
Andhra Pradesh	9.7	(52.8)	(47.2)	(73.8)	(26.2)
Assam	**6.70**	**(49.3)**	**(50.7)**	**(84.1)**	**(15.9)**
Bihar	7.46	(46.7)	(53.3)	(89.1)	(10.9)
Delhi	6.83	(49.8)	(50.2)	(2.4)	(97.6)
Gujarat	7.92	(53.1)	(46.9)	60.2	(39.8)
Haryana	8.65	(50.4)	(49.6)	69.0	(31.0)
Karnataka	9.48	(52.6)	(47.7)	62.3	(32.7)
Kerala	12.55	55.1	44.9	52.4	(47.6)
Madhya Pradesh	7.87	(51.5)	(48.5)	73.4	(26.6)
Maharashtra	9.88	52.7	(43.3)	62.8	(37.2)
Odisha	9.49	49.95	50.05	86.35	13.65
Punjab	10.33	(49.6)	50.4	68.3	31.7
Rajasthan	7.46	(52.4)	(47.6)	(76.8)	(23.2)
Tamil Nadu	10.14	(51.3)	(48.7)	(53.6)	(46.4)
Tripura	7.88	(51.0)	(49.0)	(71.0)	(29.0)
Uttar Pradesh	7.73	(48.0)	(52.0)	(80.6)	(19.3)
West Bengal	8.48	(50.3)	(49.7)	(63.3)	(36.7)

Source : Calculation by the researcher based on 2011 population census.

So far as the rural-urban break-up is concerned, a majority of the elderly in the rural areas has been observed in all most all the states except, the union territory of Delhi. Amongst the states, Bihar tops the table with 89.1 per cent of the elderly population in the rural area followed by Odisha with 86.35 per cent, Assam with 84.1 per cent and Uttar Pradesh with 80.6 per cent. The Union Territory Delhi being the capital of India, shows the highest percentage share of the elderly population in the urban area (97.6 per cent) followed by the state of Kerala (47.6 per cent).

Another significant observation from the above table is the feminisation of the elderly population. Kerala is observed to be highest (55.1 percent) in this regard and followed by Gujarat (53.1 per cent). Other states showing the percentage share of female elderly to the total elderly population above 52 percent are Andhra Pradesh (52.8 percent), Maharastra (52.7 percent), Karnataka (52.6 percent), and Rajasthan (52.4 percent). In the state of Assam, the percentage share of female elderly to the state's population is observed to be marginally below the percentage share of the male elderly.

Distribution of households by the number of aged members

The population census of India 2011 gives an interesting data to understand the distribution of the elderly in the households. It is shown in the **Table-1.9.** It is observed that 68.7 per cent of the households, 67.5 per cent in rural area and 71.2 per cent in the urban areas, do not have any aged person, (i.e. a person of age 60 years or more), in the household.

Table- 1.9
Per cent distribution of households by the number of aged members, India

Number of elderly in the household	Total	Rural	Urban
None	68.7	67.5	71.2
1	21.6	22.1	20.5
2	9.3	9.9	7.9
3	0.4	0.4	0.4
4 or more	0.1	0.1	0.1

Source: Population Census 2011

21.6 per cent have one aged person and 9.3 per cent have 2 aged members in the household. The corresponding proportions are 22.1 per cent and 9.9 per cent in rural area and in urban area, 20.5 per cent and 7.9 per cent respectively. Only 0.1 per cent households have 4 or more aged members.

The Trend in the Sex Ratio of the Elderly Population

Table-1.10 depicts the trend in Sex Ratio (number of females per thousand males) for elderly and the general population according to Census of India. It is evident from the data that a progressive increase in the proportion of females to males in the elderly population.

Table-1.10

Sex ratio of the Elderly Population and the General Population

Year	Sex Ratio of Elderly population	Sex Ratio of General population
1951	1028	946
1961	1000	941
1971	938	930
1981	960	934
1991	.930	927
2001	972	933
2011	1033	943

Source: Census of India for 1951-2011

The sex ratio among the elderly people was as high as 1028 in 1951 but subsequently dropped to about 938 in 1971, but has finally increased again to about 1033 in 2011. It has been found that there was relatively higher ratio of females to males in elderly population than in the general population for all the years.

Factors Responsible for Ageing of Population in India

The major demographic factors like, decrease in fertility rates due to larger access to contraceptives, increase in the age at marriage of girls, decrease in infant mortality rate, extended longevity of the people because of advances in the field of medical science and medicines, public health, nutrition, and sanitation are found to be responsible for the growing share of the elderly population in India (Bloom, Hu. 2014). According to U.N

Ageing Report (2015) fertility decline has been the primary determinant of population ageing in the world.

Table-1.11 depicts the crude birth rate and total fertility rate by residence in India. The Total Fertility Rate declined from 4.5 percent in 1981 to 2.4 percent in 2011. Differences in fertility rates have been observed in rural and urban area. Higher fertility rates have been observed in rural area as compared to that of urban area for all the years.

Table -1.11

Crude Birth Rate (CBR), Crude Death Rate (CDR) and Total Fertility Rate(TFR) by residence over time in India (per 1000)

Year	Crude Birth Rate (CBR)			Crude Death Rate (CDR)			Total Fertility Rate (TFR)		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
1981	35.6	27.0	33.9	13.7	7.8	12.5	4.8	3.3	4.5
1991	30.9	24.3	29.5	10.6	7.1	9.8	3.9	2.7	3.6
2001	27.1	20.3	25.4	9.1	6.3	8.4	3.4	2.3	3.1
2011	23.3	17.6	21.8	7.6	5.7	7.1	2.7	1.9	2.4

Source: SRS, Registrar General, Vol. 46 No. 1 January 2012, India & SRS-2010

(April, 2012), SRS Statistical Report 2011

Crude Death Rate (CDR) in combination with the Crude Birth Rate (CBR) determines population growth rate. CDR registered a decline from 12.5 deaths per 1000 population in 1981 to 7.1 deaths per 1000 population in 2011 i.e. a decline of 43.2 per cent. The maximum decline in CDR was observed during the first period 1981-90. On comparing the CDR in rural and urban area, it has been found that though the CDR declined in both rural and urban area but still a big difference existed between them. The decline in CDR was higher in urban area as compared to the urban area. Improvements in

medical facilities, public health and sanitation, spread of education have helped to bring down the crude death rate in India.

Life Expectancy

Extended life of population increases the segment of the elderly population. Life expectancy at birth has improved vastly over the last few decades, increasing from 36.2 years in 1950 to 67.5 years in 2015.It is projected to rise to 75.9 years by 2050 . Average life expectancy at age 60 has also increased dramatically, rising from about 12 years in 1950 to 18 years in 2015 and projected to rise further to more than 21 years by 2050. Average Indian life expectancy at age 80 has likewise increased significantly, from about 5 years in 1950 to more than 7 years at the present time. By the middle of this century, it is predicted to rise to 8.5 years (United Nations 2015).

Table- 1.12

Life Expectancy of age at 60 in India by Sex

Year	Males	Females
1961	11.2	13.0
1971	13.6	13.6
1981	13.8	14.7
1991	14.5	15.4
2001	15.2	16.7
2009-2013	16.9	19.0

Source: SRS, Registrar General, Vol. 46 No. 1 January 2012, India & SRS-2010 (April, 2012), SRS Statistical Report, 2011; Social statistics Division, Government of India.2016

Table-1.12 shows expectancy of life at age 60 population by sex. It is observed that there is an increasing trend for the life expectancy of both the male and female elderly population for the years. Life expectancy for female was 13 per cent in 1960 and it went

up to 19 percent in 2013. In comparison to female, life expectancy for male was 11.2 and 16.9 per cent respectively. It indicates that there will be more female elderly in this segment of the population in India.

Ageing Index and Median Age: India and Assam

Ageing index is the shift in the balance between the child and older population and is expressed as the persons above 60 years for every 100 children below the age of 15 years.

Median age is that age at which half of the total population is younger than that age and half is older than that age (United Nations, 2001a). It clearly indicates whether the population of a country is young or old. There is an inverse relationship between fertility rate and median age.

In **Table- 1.13** ageing index is shown for India and the states for the period 1991- 2011 period. It is observed that India's ageing Index which was 17.6 in 1991 increased to 26.8 in 2011. Kerela had the highest index of age while Assam and Delhi had the lowest indices. An increasing trend in median age of the population has been observed both at national and state level. In the year 2011, the state of Goa recorded the highest median age (31.3 years) which is higher than the National average (24.2 years). The median age was found to be 22.5 years in Assam, for the said year (**Table- 1.13**).

Table- 1.13

Comparative statistics of Median age and Index of Ageing : India & states, 1991-2001.

State	1991		2001		2011	
	Median age	Index of Ageing	Median age	Index of Ageing	Median age	Index of Ageing
India	**21.6**	**17.6**	**22.7**	**21.1**	**24.2**	**26.8**
Andhra Pradesh	33.6	18.1	24.4	23.7	26.2	27.8
Assam	**20.4**	**13.6**	**21.6**	**15.7**	**22.5**	**17.3**
Bihar	19.9	14.7	19.5	15.8	20.6	16.7
Delhi	23	14.1	23.5	16.	24.1	17.3
Goa	21.7	16.7	27.6	33.9	31.3	35.7
Gujarat	21.7	16.7	23.6	21	25.8	26.1
Haryana	19.8	18.6	21.8	20.9	23.0	22.6
Karnataka	22.2	18.8	24.3	24.1	26.3	28.5
Kerala	24.4	28.9	27.9	40.2	30.7	44.6
Madhya Pradesh	20.6	16.2	21.1	18.4	22.6	20.2
Maharashtra	22.9	19.6	24.4	27.2	25.4	31.3
Punjab	22.1	21.2	24.2	28.8	26.0	34.3
Rajasthan	19.8	14.9	20.1	16.9	21.5	17.8
Tamil Nadu	24.5	23.2	27	33	29.2	39.6
Tripura	21.4	18.8	23.3	21.6	24.8	23.2
Uttar Pradesh	19.9	16.4	19.6	17.2	20.2	18.6
West Bengal	22.2	16.6	24.1	21.4	25.7	24.4

Source: Census of India:1991,2001 and 2011.

1.6.1.B Socio-economic profile of the Elderly in India

To understand the situation of the life of the elderly people, we need to understand the social structures of the elderly as well as their economic position and their health status. Old age is characterized by deterioration of physical capacity. This change of physical ability brings a change in person's active participation in different areas of life. A Dependent life of the elderly person is more vulnerable and stressful. Hence, it is very important to have an analysis on these aspects of the elderly population.

Social Profile of the Elderly

This section examines the social conditions of the elderly population in India. The social conditions of the elderly in India, covering marital status, literacy level, living arrangements, have been discussed as below.

Marital status

Marital status of the elderly assumes special significance in the context of care in old age as it is known that those who are married fair better in all economic and social aspects than those who are single. A major concern related to the increasing proportion of the elderly women, especially widows in the population. Two reasons are given for the marked gender disparities in widowhood in India firstly, longer life span of women compared to that of men and secondly, the general tendency in India for women to marry men older than themselves (Gulati and Irudaya Rajan 1999). Also widowed men are much more likely to remarry and thus restore their earlier status. Though the relationship between the well being of the elderly and their marital status cannot be spelt out precisely, any change in the marital status of the elderly deserves careful examination.

The percentage of currently married elderly people is observed to be highest with 59.2, followed by widowed elderly with 39.19 percent (**Table-1.14**).

Table1.14

Percentage distribution of marital status of the Elderly in India: Rural-Urban

Marital status	Rural			Urban			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Never married	1.65	0.55	1.10	1.74	1.19	1.46	1.67	0.71	1.19
Currently married	78.57	39.06	58.96	82.27	38.64	59.97	79.45	38.95	59.21
Lost one's spouse	19.43	59.85	39.49	15.85	59.71	38.27	18.58	59.81	39.19
Divorced/separated	0.36	0.54	0.49	0.14	0.47	0.31	0.31	0.53	0.42

Source: NSSO 60th round (Jan-Jun, 2004) .

The proportion of currently married male elderly population is found to be highest in both rural (78.57 percentage) and urban (82.27 percentage) area. Incidence of widowhood for elderly women is found to be nearly 60 percent in both rural and urban area while, in case of the elderly male, it is found to be 15.85 percent in urban area and 19.43 per cent in the rural area.

Literacy Rate of the Elderly

Education increases the ability of an individual to think rationally and logically. It is an important determinant of various demographic decisions of the individuals. According to Census 2011, it has been found that the levels of birth rate, death rate and infant mortality rate are higher in the states where female literacy rates are lower. Despite the spread of education over time, however, its benefits have not been reached to the elderly population. There is a huge gap between the literacy level of the elderly males and females as well as of the general overall population.

Table-1.15

Percentage of literates among the Elderly in India: Rural-Urban, 1991-2011

Year	Rural			Urban			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
1991	34	18	21	66	31	49	41	13	27
2001	45	13	29	75	42	58	53	20	36
2011	51	18	34	80	53	66	59	28	44

Source: Census of India 1991, 2001, 2011

Table- 1.15 depicts us about the percent of literates among elderly in India. It is evident that literacy level among elderly males and females has increased over time in both rural and urban areas. It is observed that there is a significant gap between male and female literacy rates among the elderly population in India. The literacy rate of females is 28 percent only while males recorded 59 percent for the same period. It is also observed further that improvement of literacy is found to be high in urban areas for all the years.

Living arrangements among elderly

Living arrangement is an important component in determining the welfare of any specific group. The elderly persons, being less able to be independent, need the care and support of others in several respects. The care and support enjoyed by the elderly is linked to their residence, in other words, the living arrangements.

Table 1.16

Percentage Distribution of Elderly by Their Living Arrangements, 2004

Living arrangement	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Living alone	1.97	3.49	2.72	1.70	4.33	2.92	1.77	4.07	2.86
With spouse	8.10	4.86	6.51	8.27	6.00	7.22	8.22	5.65	7.01
With spouse children & grand children	58.70	40.75	49.86	59.15	42.62	51.5	59.02	42.05	51.01
With children & grand children	29.17	48.75	38.81	30.13	45.97	37.47	29.86	46.83	37.86
With other relatives	1.97	2.11	2.04	0.75	1.06	0.89	1.09	1.38	1.23
With other non relatives	0.10	0.04	0.07	0.01	0.02	0.01	0.03	0.02	0.03

Source: NSSO 60th round (Jan-Jun, 2004)

NSS 60th Round (**Table-1.16**.),show that about 4 to 5 percent were living with other relations and non-relations, about 57 percent of the aged were living with their spouses and another 32 percent were living without their spouses and with their children. Moreover, 4 to 5 percent were still living alone. According to the NSS 60th round, 59.02 per cent of the male elderly live with their spouses, children and grandchildren; the corresponding percentage for the female elderly is only 42.05 per cent. On the other hand, 46.83 percent of the female elderly live with their children and grandchildren (without spouse) and only 29.86 per cent of the males live with children and grandchildren, without their spouse. We can interpret this finding also in a different manner. The elderly who live with children and grandchildren are likely to be widows or widowers. As we have already noted, there are more widows in India than widowers who are residing in large numbers with their children and grandchildren. Another

significant observation is that elderly women living with children and grand children are found to be highest in rural and urban area compared to their male counterparts.

Economic Profile of the Elderly

Lack of financial resources is one of the major problems of the Indian elderly and it seems to be of higher degree among the elderly women in comparison to their male counterparts. There is another major problem i.e., the loss of economic independence with the increase in age. Financial problems are more common among widows and among the elderly who live in nuclear families. The major sources of worry for the elderly are stress and economic dependence. For understanding their economic dependence, it is very necessary to analyse gainful employment among elderly. In the normal circumstances, most of the elderly in the formal sector would have retired from the labour force. However, in Indian situation there is no question of formal retirement of the elderly where the unorganized sector accounts for a larger share of the work force and where rural labour is predominantly in agriculture or allied activities.

Dependency status of the elderly population

The state level data of NSSO, 2004 shows that full economic dependency for female elderly was high (more than 75 percent) in states like West Bengal, Uttar Pradesh, Odisha, Gujrat, Rajasthan and Jammu & Kashmir etc. while, the ratio for male was found below 35 per cent in all most all the states. In Kerala however, the gender gap in full economic dependency ratio for the elderly was comparatively narrow: for female it was 67 per cent and 39 per cent for male (NSSO, 2004). In Assam the ratio shows a wide gender gap: for female it was 75.5 per cent and for male 28.5 per cent.

Table- 1.17

Dependency status among the elderly, India: Gender & Place, 2004-05

Dependency status	Rural (%)			Urban (%)			Total (%)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Old persons									
Not Dependent	36.4	24.7	30.7	38.6	22.4	30.4	37.2	23.8	30.6
Partially Dependent	18.6	17.1	17.9	16.0	13.4	14.7	17.6	15.6	16.6
Fully Dependent	45.0	58.2	51.4	45.4	64.2	54.9	45.2	60.6	52.8
Elderly who have lost their spouses									
Not Dependent	33.3	2.4	18.0	38.1	17.3	21.7	34.8	14.3	19.3
Partially Dependent	14.5	11.4	12.2	13.9	9.5	10.4	14.3	10.7	11.6
Fully Dependent	52.5	76.2	69.8	48.1	73.1	67.9	50.9	75.0	69.1

Source : S. Irudaya Rajan, ILO Asia Pacific working paper series,2010.

Table-1.17 depicts the all India level male-female dependency status among the elderly by place of residence. It is evident from the table that 52.8 per cent of the elderly are fully dependent. Female elderly ratio is observed to be 60.6 and it is 45.2 for male elderly population.

Status of Gainful Employment among the Elderly

Table- 1.18 shows the status of gainful employment among the elderly sex-wise. It is clear from this table that majority were not productively employed in the work force. In India only 33.8 percent were engaged in the productive work while, it was significantly higher in the case of males 53.1 percent and only 14.6 percent in case of females. The difference was mainly due to the fact that an elderly woman generally engages in the household duties that are out of the purview of economic activities. The elderly in the rural area were more engaged in the economic activity (38.2 percent) than their urban counterparts (20.0 percent) as they are forced to work by the conditions of the deprivation in which they live.

Table- 1.18

Percentage Distribution of gainful employment of the elderly: India, 2004

Status	Rural			Urban			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Economically Active	59.3	16.7	38.2	33.0	8.0	20.2	53.1	14.6	33.8
Non Active	40.7	83.3	61.8	67.0	92.0	79.8	46.9	85.4	66.2

Source: NSSO 60th round (Jan-Jun, 2004)

According to NSSO 60th round report 2004, the status of gainful employment among the elderly in Indian states is shown a similar pattern as observed in the National scenario. There was a significant fall in work participation rate in the higher age groups. At all India level figures show that in the case of males it drops down from 53.1 percent in 60-79 years age group to 15.28 percent in the eighty plus years of age group. In the case of females' elderly, it drops down further from 14.6 percent to 2.43 percent in the same age group. At state level,the state of Punjab, the gainful employment of males elderly were observed to be 50.42 percent in the age category of 60-79 years while, it was 10.55 percent in the age category of 80 and 80+ years while, in case of females, the figures in these two age groups were 5.62 percent and zero percent respectively. Moreover, these figures were below all India level for both male and female. One of the critical issues raised in the high levels of work participation is that for poor elderly people there is only one retirement, not from work, but from the world" (Irudaya Rajan, Mishra, and Sharma 1999). The high levels of work participation among the elderly shows that majority of them are working to avoid the economic and social crisis, that, they faced both within and outside the family set up.

Table- 1.19

Labour force participation by broad age group by sex and place of residence: India, 2001 (%)

Age	Total			Rural			Urban		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
15-59 yrs	61.1	80.7	40.0	66.8	83.4	49.5	48.0	74.9	17.6
60+ yrs	**40.3**	**60.3**	**20.9**	**45.0**	**65.6**	**24.9**	**26.2**	**44.1**	**9.0**
70+ yrs	30.3	49.4	12.2	33.1	52.4	14.2	21.9	39.7	6.7
80+ yrs	21.3	34.6	8.6	23.3	36.8	10.0	15.4	27.8	4.7
Total	**39.1**	**51.7**	**25.6**	**41.8**	**52.1**	**30.8**	**32.3**	**50.6**	**11.9**

Source :Census India, 2001

Table- **1.19** shows that labour force participation of older persons is 40.3 per cent for male and 20.9 per cent for female, with more of them in rural than urban. These gender and rural-urban variations were also seen among other groups.

Property and financial assets

Table- 1.20

Ownership of Property and financial asset management among older persons and widowed persons, by gender and area of residence

	Rural		Urban	
	Male	Female	Male	Female
Older Persons				
Ownership of property	81.9	47.9	76.5	43.4
management of own property	65.7	21.6	62.3	20.0
Ownership of financial assets	70.3	41.2	71.3	38.5
Management of own financial assets	56.7	18.9	58.6	17.6
Elderly who have lost their spouses				
Ownership of property	73.6	44.0	66.1	39.8
management of own property	50.5	18.0	46.0	17.9
Ownership of financial assets	64.2	36.1	62.6	33.3
Management of own financial assets	44.9	15.1	44.7	15.2

Source: Kodoth and Irudaya Rajan, 2008

It is evident from **Table- 1.20** that there are striking gender differences. it is also observed that under all categories female elderly are largely disadvantaged. This significant difference is due to perhaps, limited implementation of inheritance laws in urban and rural areas. It is also observed that more than three quarters of older man in rural and urban areas owned properties while, it was less than half of the older women.

There is a significant gender gap in the ownership and management of property, i.e. 65.7 per cent of men and 21.6 per cent of women in rural areas, while, 62.3 per cent of men against 20.0 per cent of women in urban areas. While, the low percentage of elderly persons owning and managing property may be attributed to their age, the revealed disadvantage of women is likely to be gender-related.

There are striking gender differences. Under all categories, older women are largely disadvantaged. This is due to limited implementation of inheritance laws (Kudoth and Rajan, 2008). More than three-quarters of older men in rural and urban areas owned property, as opposed to less than half of older women.

The share of women in the widowed population is predominant in India. This is partly because of traditional reasons that the older widows are not allowed to remarry while remarriage among widowers is promoted in the society. The other reason is that, women's life expectancy is generally longer. Widowhood is a source of particular vulnerability (Dreze, 1990; Chen, 2000). This can be observed in terms of the ownership and management of property and financial assets, as explained above. Generally, the proportion of widowed persons in this category, irrespective of gender (73.6 per cent of men and 44.0 per cent of women), is lower than older persons in general (81.9 per cent

of men and 47.9 per cent of women). A similar trend is observed both in urban and rural areas.

Poverty amongst the elderly population

Table- 1.21

Poverty Estimates of Elderly Households 2004-05 (%)

Place of residence	1999-2000	2004-05
Rural	37.3	28.3
Urban	32.4	25.7
Total (R+U)	36.0	27.5

Source: Planning commission, Government of India,2005

According to the Planning Commission, Government of India, 2005, the percentage of households lived below the poverty line was 27.5 (**Table-1.21**). In the rural area, the proportion was slightly higher (28.3 per cent) than the urban area (25.7 per cent).

In general, poverty incidence is lower among households with elderly members than those without (Pal and Palacios, 2008). A similar trend was also found amongst house-holds for female elderly heads. This implies that older persons contribute to their households in terms of paid and unpaid work (Deaton and Paxson, 1995).

1.6.1.C Health status of Elderly

Ageing is associated with health problems or diseases. People are exposed to the vulnerability of multiple chronic diseases and physical incapability as well as mental incapacities in their later age.

Table- 1.22

Number of person aged 60 years and above reporting a chronic disease (per 1000 persons) by sex (India)

Types of Chronic Disease	Rural			Urban		
	Male	Female	Total	Male	Female	Total
Whooping cough	8	6	7	4	2	3
Ulcer	37	54	44	30	24	27
Problems of Joints	30	40	34	26	45	35
Hypertension	23	53	36	50	59	54
Heart Disease	95	59	80	165	162	164
Urinary problems	78	28	57	89	33	63
Diabetes	30	52	40	68	36	53
Cancer	18	36	26	25	25	25

Source: NSSO 60th round (Jan-Jun, 2004)

The heart disease is observed to be the major chronic problems among both male and female elderly in India (**Table- 1.22**). In the urban area, the proportion of heart diseases amongst the elderly both, males and females, was higher than that of in the rural area. Among the elderly males, most common problem was urinary problem. On the other hand, hypertension was more pronounced among the elderly females (i.e., 59 female in the urban area and 53 in the rural area).

It can be concluded that on account of the demographic transition, a major change has taken place in the age structure of the population, especially amongst the elderly population. Ruralisation and feminsation in the elderly segment of the population are the most significant phenomenon of the ageing population in India. The cause of this change is mainly due to the decline in fertility and mortality rates and extended life

expectancy of the people aged 60years and above. As a consequence of this demographic ageing process, there occurs a series of socio-economic problems and health problems in India like, loneliness, economic dependency, poor health, malnutrition etc. As women demographically out lived men, widowhood and living without spouse is one of the real challenges for the Indian female elderly. Among the elderly people only two categories, namely those who live with spouse, children and grandchildren and those who live with children and grandchildren but without spouse, are predominant among the Indian elderly (NSSO, 2004). In India only one third of the elderly are engaged in the productive work while, it is significantly higher in the case of men than in case of women. Elderly females were more economically dependent either fully or partially (NSSO, 2004). Males were in much better condition than females. Since age is associated with increase in physical illness and disability, ageing becomes an essential part of the health care delivery system. Therefore in-depth studies through multidisciplinary assessment on issues like socio-economic problems, health, and social security needs of the elderly throughout the country.

1.7 Ageing in North Eastern States

North-Eastern part of India consists of eight states, namely Arunachal, Assam, Manipur, Nagaland, Mizoram, Meghalaya, Sikkim and Tripura. Like other states of India, the north eastern states also show an increasing trend of ageing population (**Table- 1.23**). It is observed that Tripura recorded highest proportion (7.9 percent) of ageing population followed by Assam (6.7 percent) in 2011. So far the decadal differences are concerned, Sikkim stands at the top of the table (1.4) followed by Assam (0.8) for the said period.

Table- 1.23

Proportion of population in 60+ age group in North Eastern states, India, 2001-2011

States	Total population(60+)		Decadal differences
	2001	2011	
Arunachal Pradesh	4.6	4.6	00
Assam	**5.9**	**6.7**	**0.8**
Manipur	6.9	7.0	0.1
Meghalaya	4.5	4.7	0.2
Mizoram	5.6	6.3	0.7
Nagaland	4.6	5.2	0.6
Sikkim	5.3	6.7	**1.4**
Tripura	**7.4**	**7.9**	**0.5**

Source: Census 2001 & 2011.

The share of ageing population (60 years and above) in absolute numbers, in case of Assam, is observed to be the highest (**2079)** amongst the North Eastern states while,the state of Sikkim stands at the bottom of the table for the census year, 2011 (**Table-1.24**).

Table-1.24

Elderly population (60 years and above) in North Eastern States, India: Sex & Place, 2011: (000)

State	Total			Rural	Urban
	persons	Females	Males		
Arunachal Pradesh	63	30	33	56	7
Assam	**2079**	**1024**	**1055**	**1748**	**331**
Manipur	200	100	100	132	68
Meghalaya	139	72	67	110	29
Mizoram	68	34	34	32	36
Nagaland	103	48	55	81	22
Sikkim	41	17	22	33	8
Tripura	290	148	142	206	84

Source : Census India, 2011.

The rural-urban break-up shows a significant phenomenon that except Mizoram (47.05 per cent) all the states having more shares of ageing population in the rural area, Assam having a share of 84.07 per cent in this regard.

Male and female break-up of the ageing population shown in the above table exhibits a significant difference from the National level i.e., male marginally outnumbered the female while, at the National level females outnumbered the males (sex ratio1033).

1.8 Ageing population in Assam

Assam, the gateway of the North-Eastern region, is surrounded by Bhutan and Arunachal Pradesh on the North, Nagaland and Manipur on the East, Meghalaya and Mizoram on the South and Bangladesh, Tripura and West Bengal on the West. At present the total area of Assam is 78,523sq. Km. It accounts 2.4% of the total geographical area of the country. Demographically Assam is the most populous state in the North- East India. Economically out of eight North Eastern states, Assam is the most developed one.

Table-1.25

Demographic profile of Assam: (2001-2011)

	2001	2011
Total population (in 1000)	2665528	3125576
Percentage of Urban population	12.98	14.1
Percentage of rural population	87.09	85.9
Decadal change in population (%)	18.92	17.07
Percentage of elderly population	5.9	6.7
Density of population (per sq. km)	340	396
Sex ratio	935	958
Literacy rate (%)	63.25	72.19
Crude Birth rate (per thousand)	26.8	22.4
Crude death rate (Per thousand)	9.5	8.0

Source : Census of India, 2001 and 2011.

From **Table-1.25** below it may be noted that the number of population is increasing in Assam. The average life expectancy at birth has become reasonably longer while, infant mortality rate and crude death rate along with crude Birth rate have gone down remarkably. The literacy rate has shot up to 72.19 in 2011 from 63.25 in 2001.The higher literacy rate represents an incremental spread of education, leading to a better level of awareness .A reduction in crude birth rate reduces the supply of younger people while a decreasing death rate signifies the increasing number of older people with a longer life of expectancy.

Table- 1.26 shows a comparative statistics of the growth of ageing population between India and Assam from 1971-2011 census data.

Table- 1.26

Comparative Statistics of Ageing Population of India and Assam : 1971 to 2011

	% of Aged population (60+) to total population				
	2011	**2001**	**1991**	**1981**	**1971**
INDIA	8.6	7.4	6.7	6.3	6.0
ASSAM	6.7	5.9	5.3	n.a	4.3

Source: Census 1971, 1981, 1991 & 2001, Govt. of India.

An increment of ageing population (60 years and above) is observed to be found both at national level as well as at state (Assam) level (**Table- 1.26**). It is observed that though the ageing population is increasing in Assam from 4.3 per cent in 1971 to 6.7 per cent in 2011. At national level, the increase in the proportions is from 6.0 in 1971 to 8.6 in 2011.

Table- 1.27

Life Expectancy at 60years by Sex: India and Assam, 2011

	Male	**Female**	**Difference**
INDIA	17.0	18.4	1.4
ASSAM	15.4	17.9	2.7

Source : Government of India ,2013 (National average) and Government of India, 2015 for state estimates.(The difference is computed by the researcher.)

Table- **1.27** shows that life expectancy at birth has increased both at national and state level. This implies an improvement of health facilities both at state and national level which has been reflected in the decreasing trend of mortality rate and Crude Birth rate. Life expectancy at 60 years and above is found to be high in both male and female population in India as compared to Assam for the year 2011. It is 17.0 years in male and 18.4 years found in female In India and 15.4 years and 17 years in Assam respectively. Significant gender disparities are observed in the above table while analyzing the life expectancy for this segment of population in both at national level and at state level. The gender gap is 1.4 years for India and it is 2.7 years for Assam for the same period but this gap is observed to be more in Assam in comparison to India. This implies that though at present the elderly male outnumbered female elderly in absolute numbers in Assam (**2011 Census**) but in near future there will be more female elderly population in Assam.

Table- 1.28

Literacy Rate of the Elderly by Sex & Rural-Urban: India & Assam, 2011

	Total	Males	Females	Rural	Urban
Assam	47.3	63.2	30.8	42.1	74.6
India	43.5	59.1	28.5	34.2	66.0

Source : Census,2011.Govt. of India ,Statistics Division,2016.

Table-1.28 gives a picture of the literacy rate of the elderly population in India and Assam. An interesting observation is that Assam is having more literate elderly in comparison to India .It is observed to be 47.3 and 43.5 in Assam and India respectively.

The rural-urban break up shows that there are more aged persons in urban areas both at national and state level but a significant gender disparity is also observed at both national as well as at the state level. There is a wide gap of male and female literacy rate 63.2 per cent and 30.8 percent is for male and female in Assam while, it is found to be 59.1 per cent and 28.5 percent for male and female for India for the same period. It indicates that there will be less awareness and consciousness of health and other issues of the elderly population in rural areas. Since, it is believed that education gives benefits to all.

Table- 1.29

Comparative Statistics of the Dependency Ratio, India & Assam: Rural-Urban,1991- 2001

	2001						1991					
	Young			Old			Young			Old		
	T	R	U	T	R	U	T	R	U	T	R	U
India	62.1	67.8	49.1	13.1	14.1	10.7	67.2	71.0	57.3	12.2	13.2	9.7
Assam	66.0	70.0	43.4	10.3	10.6	8.8	74.47	77.8	46.5	9.9	10.1	8.0

Source:- S. Iruduya Rajan,U.S Mishra, P. Sankara Sarma, India's Elderly.

Total dependency ratios (as calculated in **Table-1.29**) are used as economic indicator of economic potential. It shows how dependency is distributed between non working children on the one hand and elderly people on the other. It is observed that the old dependency ratio at national and state level has increased from 12.2 to 13.1 in 1991 to 2001 respectively while in Assam it is 9.9 to 10.6 for the same period. But a decreasing trend is seen in case of young dependency ratio. This implies an increment in the

supporting cost of the society as well as a negative impact on the life of the elderly. More dependency indicates a stressful life for the elderly.

Table- 1.30

Work Participation of the Elderly by Sex & Place of Residence: India & Assam, 1991

	Total (%)			Rural (%)			Urban (%)		
	Total	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**
INDIA	39.13	60.53	16.14	43.10	65.36	18.96	24.29	42.39	6.30
ASSAM	41.72	64.72	14.20	43.31	65.84	15.50	27.96	48.47	3.09

Source:- S. Iruduya Rajan,U.S Mishra, P. Sankara Sarma, India's Elderly.

Work participation rate of the elderly in Assam is more than that of India (shown in **Table- 1.30).** Rural elderly work participation (in India 43:10 per cent and 43:31 per cent in Assam) is more compared to that of urban areas (24:29 in India and 27:96 in Assam), both at the national and state level. Increased participation of the elderly in the labour market indicates their deteriorating economic situation and inadequate structure of the society. A male female break up data shows that there is a significant wide gap between Assam and India. A similar trend is also observed in rural and urban areas.

District wise demographic profile is given in the following **Table-1.31**. There are 27 districts in Assam (Census 2011). The district wise demographic profile indicates that the total area of the districts is not proportional to their size of population.

Table-1.31

Assam with Districts, Census 2011

State / District	Total Area (in Sq.Km) 2001	Total Population 2011	Decadal growth rate 2001-2011	Sex ratio 2011	Literacy Rate 2011
Dhubri	2798	1949258	24.44	953	58.34
Kokrajhar	3538	887142	5.21	959	65.22
Bongaigaon	2152	738804	20.59	966	69.74
Goalpara	1824	1008183	22.64	964	67.37
Barpeta	3245	1693622	21.43	953	63.81
Nalbari	2257	771639	11.99	949	78.63
Kamrup*	**4345**	**2771480**	**17.01**	**970**	**82.13**
Darrang	3481	928500	22.019	954	63.08
Udalguri	2012	831668	9.61	973	65.41
Baska	2457	950075	1074	974	69.25
Sonitpur	5324	1924110	15.55	956	67.34
Lakhimpur	2277	1042137	17.22	968	77.20
Dhemaji	3237	686133	19.97	953	72.70
Morigaon	1551	957423	23.34	967	68.03
Nagaon	3973	2823768	22.00	962	72.37
Golaghat	3502	1066888	12.75	964	77.43
Jorhat	2851	1092256	9.31	962	80.41
Sibsagar	2668	1151050	9.44	954	82.15
Dibrugarh	3381	1326335	11.92	961	76.05
Tinsukia	3790	1327929	15.47	952	69.66
KarbiAnglog	10434	956313	17.58	951	69.25
N.C.Hills	4888	214102	13.84	932	77.54
Karimganj	1809	1228686	21.90	963	78.22
Hailakandi	1327	659296	21.45	951	74.33
Cachar	3786	1736617	20.19	959	79.34
Chirang	1923	482162	11.34	969	63.55
Assam	**78438**	**31205576**	**17.07**	**958**	**72.19**

*Source: Statistical hand book of Assam, 2013 (*figures include both Kamrup metro and Kamrup)*

The decadal growth rate of population of the districts are found to vary from 24.44 (Dhubri) to 5.21 (Karbi Anglang). The decadal growth rate of undivided Kamrup district

(includes both Metro Kamrup and Kamrup) is found to be equal to the state average (17). So far the sex ratio is concerned, Baska district (974) stands at the top of the table and Nalbari district (949) at the bottom. Undivided Kamrup district is listed at the third position with the sex ratio, 970. The literacy rate of Sibsagar is found to be highest (82.15) amongst the districts followed by undivided Kamrup district with 82.13 while, the lowest literacy rate is found in Dhubri (58.34).

Table – 1.32

Elderly Population (60 years & above) Assam & Districts: 2011

	Persons	Males (%)	Females (%)
Assam	2078544	50.75	49.25
Kokrajhar	54286	49.42	50.58
Dhubri	112698	47.82	52.18
Goalpara	57933	47.67	52.33
Barpeta	109890	48.21	51.79
Morigaon	61982	50.78	50.45
Nagaon	191184	50.78	49.22
Sonitpur	130827	52.92	47.08
Lakhimpur	69083	51.21	48.79
Dhemaji	42180	51.95	48.05
Tinsukia	84665	52.00	48.00
DIrugarh	89468	51.46	48.54
Sivasagar	85246	52.78	47.22
Jorhat	87908	52.34	47.66
Golaghat	73843	52.44	47.56
Karbi Anglong	49953	52.25	47.75
Dima Hasao	11292	53.92	46.08
Cachar	121705	51.26	48.74
Karimganj	86228	50.03	49.95
Hailakandi	42990	52.20	47.80
Bongaigaon	46586	47.69	52.31
Chirang	29125	50.14	49.86
Kamrup	109137	49.18	50.82
Kamrup Metro	87617	54.20	45.80
Nalbari	62985	49.24	50.76
Baksa	66405	49.01	50.99
Darrang	59938	51.19	48.81
Udalguri	54364	50.60	43.40

Source : calculated by the researcher from the census data ,2011

While, dealing with the elderly population data at district level (**Table-1.32**) it is observed that in only eight districts namely, Kokrajhar, Dhubri, Goalpara, Morigaon, Bangaigaon, Nalbari, Baska and Barpeta, female population marginally outnumbered the male population. So far the state is concerned, male elderly population is larger than the female elderly population. However, the gender gap is not pronounced in the state as well as in the districts.

Table – 1.33

Elderly Population (60 years and above) Assam & Districts: 2011

State/ Districts	Rural			Urban		
	Total	Males (%)	Females (%)	Total	Males (%)	Females (%)
Assam	1747513	50.60	49.49	331031	51.51	48.49
Kokrajhar	50550	49.44	50.86	3736	49.14	50.86
Dhubri	96695	47.88	52.58	16003	47.42	52.58
Goalpara	49736	47.56	51.65	8197	48.35	51.65
Barpeta	97698	48.29	52.40	12192	47.60	52.40
Morigaon	57550	49.54	50.38	4432	49.62	50.38
Nagaon	161202	50.85	49.56	29982	50.42	49.56
Sonitpur	116475	52.92	47.01	14352	52.99	47.01
Lakhimpur	62983	51.09	47.57	6100	52.45	47.57
Dhemaji	39402	51.81	48.19	2778	53.89	46.11
Tinsukia	64029	51.93	47.77	20636	52.23	47.77
Dbrugarh	70321	51.22	47.68	19147	52.32	47.68
Sivasagar	77216	52.80	47.48	8030	52.52	47.48
Jorhat	69521	52.27	47.40	18387	52.60	47.40
Golaghat	66148	52.47	47.53	7695	52.14	47.86
Karbi Anglong	44854	52.25	47.75	5099	52.27	47.73
Dima Hasao	8635	54.41	45.59	2657	52.35	47.65
Cachar	94202	51.62	45.8.38	27503	50.01	49.99
Karimganj	76485	50.27	49.73	9743	48.15	51.85
Hailakandi	38608	52.80	47.20	4382	46.92	53.08
Bongaigaon	39015	47.31	52.69	7571	49.65	50.35
Chirang	26513	50.27	49.73	2612	48.81	51.19
Kamrup	97953	49.17	50.83	11184	49.29	50.71
Kamrup ((Metro	13799	52.26	48.74	73818	54.75	45.25
Nalbari	55681	49.10	50.90	7304	50.27	49.73
Baksa	65623	49.03	50.97	782	48.08	51.92
Darrang	55901	52.12	48.88	4037	52.17	47.83
Udalguri	51671	50.61	49.39	2693	50.39	49.61

Source : calculated by the researcher from the census data ,2011

The rural-urban break-up is shown in the above **Table-1.33**. The rural areas have a larger share of elderly population in Assam. Same trend is also observed at the district level too. While taking the distribution of male and female elderly population in rural and urban areas, it is found to be less significant at both state and district level. In other words the gender gap of elderly population is marginal at the state as well as at the district level.

Table-1.34

Comparative Statistics of Elderly Population (60+ age group) for Five Major Districts of Assam by Sex, 2011.

Districts	Total Elderly Population	% of Elderly population	Total Male elderly population	%Male elderly population	Total Female elderly population	% of female elderly
Kamrup*	**196754**	**9.4**	**101171**	**51.4**	**95583**	**46.6**
Nagaon	191184	9.2	97085	50.8	94099	49.2
Sonitpur	130827	6.3	69239	52.9	61588	47.1
Dhubri	112698	5.4	53889	47.8	58809	52.2
Cachar	121705	5.9	62383	51.3	59322	48.7
Assam	**2078544**	**6.7**	**1054817**	**50.7**	**1023727**	**49.3**

Source : Census of India 2011.

Note : % of elderly population by sex has been calculated from the respective total population (60+age group) of districts.

A comparative analysis of elderly population date amongst the five top districts of Assam (as shown in the **Table-1.34**) exhibits Kamrup having the largest share (9.4) tops the list while, Dhubri (5.4) is placed at the bottom of the list.

From the above analysis of the various indicators of the elderly population in Assam, it can be understood that problems of elderly population in Assam can't be ignored. The problems of ageing population are expected to take a wider dimension in coming years.

Hence, a proper investigation on the nature of the socio-economic and demographic profile of ageing population and their problem and consequences in Assam is required. The present work intends to study the above mentioned problems in Assam. For this purpose, an intensive study has been carried out in undivided Kamrup district of Assam. The selection of undivided Kamrup district for the study is on the ground that this district has the highest percentage of elderly population.

1.9 Back ground of the study

Ageing is a biological process. But, issues of ageing problems are not homogeneous. It varies in respect to gender, place of residence, economic conditions, living arrangements, health status, marital status etc.

Increasing trend of the 60 years and above population in the total population has multi dimensional implications. It cannot be studied from one dimension. The study of ageing population is of recent origin. Various studies till date show that there are wide disparities among the rural-urban ageing. Gender gap is also found to be high in this segment of the population. The gender gap at life expectancy at 60 years is high in case of female which indicates a longer life for female in the 60 years in the age group and above. In other words, there will be a feminisation of elderly in the total population. The life of female elderly will be more stressful without spousal support and economic independency. Hence, it needs an in depth study to explore the different issues of aging population in the district.

1.10 Review of Literature

A number of studies have been carried out in abroad and in India that threw light on the various dimensions of ageing like socio-economic, demographic, and cultural ethnicity etc. A brief review of selected literature has been enlisted here.

One of the earliest sociological theories purporting to account for successful adaptation and ageing in later life comes to be known as the activity theory. According to the theory- old age should not be viewed as “role less role.’ Rather individuals could, should and typically do replace lost roles or social activities with new ones (Burgess, 1960). The theory enjoyed widespread acceptance, but has been criticized on the ground that persons who do not involve themselves self in social, intellectual activities before their 60 years of age, cannot be expected to perform those activities in the later life.

Perhaps the best known theory in social gerontology, a theory that derives from both psychological developmental ideas and consideration and sociological structural functional approaches and principles, is the disengagement theory. This theory was presented, argued and defended by E. Cumming and W. Henry in early 1960; Partly as an attack on the implicit assumption of activity theory that happiness and success in old age are the result of continuing the activities and involvements of one’s middle years without interruption and that successful aging consists in being as much like a middle-aged person as possible. According to this theory age differs markedly from middle age, with change and adaptation functionally necessary both for the individual and society. Because of the inevitability of death, the declining abilities in later life, the values placed on youth, as well as the need to assure that roles are filled and tasks efficiently, completed both individuals and society demand disengagement, according to this theory.

Another theory of ageing in later life that draws upon some of the motifs of activity theory but also incorporates an assumption of individual tendency to seek and maintain role of stability has been connoted the continuity theory. (). According to this theory (continuity theory) individuals strive to maintain continuity of role and life styles as they age. They adapt most successfully to the change of old age to the extent that they are successful in maintaining the life style developed in early and middle years of life. In other words, individuals will not like to disengage activities even in their adverse situation of life. Thus, the continuity theory incorporates part of the attack on disengagement theory as a central hypothesis. Individual disengagement does not take place except under compelling circumstances. But, in turn, critics of continuity theory have pointed out its hypothesis, assume, implicitly, that individual ageing in the later years occur almost in a social vacuum. Empty nests, widowhood, mandatory retirement, death of friends, and changing value, attitudes, behaviour and organizational features may all conspire to render impossible the putative continuity of life styles and role stability in advanced age.

Another important theory for ageing study is westernization theory. In this theory, modernization brings, in the first place, an increase in the number and proportion of the elderly, thus eroding the scarcity value of the elderly in high- mortality societies. Wide spread literacy and new words of information storage and processing as well as rapidly changing technologies order the knowledge of the elderly redundant and their skills obsolete. These developments segregate the elderly intellectually and morally, and diminish their functional value to their families, communities, and to society generally. The rise of individualism that accompany modernization all tend to reduce the authority

The well-being of the elderly depends largely on certain Socio-economic conditions such as: Labour force participation, literacy, marital status and health. In most developed countries, where social coverage is universal, the labour force participation rates are low. Even people in these countries leave their jobs before retirement (Gruber and David, 1999).

However, the picture is different in developing countries. Given little or no security, the aged cannot afford to leave the job market (organized and unorganized sector). There is, therefore, a large concentration of older worker in agriculture and allied informal sector (World labour Report, Geneva, 2000).

Marital status is another important determinant of the well being of the elderly. Married people have consistently lower rates of mortality than single, widowed and divorced people of the same age and sex. (Lillard, panis, 1996; Cheung 1998). But this longevity benefits derived from marital status of the elderly are greater for men than for women. (Wyke, Ford, 1995; Joung, Meer and Mackenbach, 1995). But contrary to this view some studies have found that single women are healthier than married women. This is because single woman has enough time for herself and free from responsibilities as care givers to their families. (Goldman, korenman, Weinstein,1995).

Education is an important determinant of the status of an individual. There is a high co-relation between educational level and the health and economic status of the older generations. Older people with higher educational back ground are generally more open, tolerant and liberal. As educational levels of the elderly improve, inter generational cultural tensions become weaker and society grows in more healthy way. Higher levels of literacy among the aged are likely to substantially alter their interest,

needs, and abilities to then own advantage and improve the quality of life, (Chakrovorty, 1998).

The level of education has also some influences on the attitude as well economic status of the individual. Lack of education is one of the reasons why many people cannot save adequately in their later life. (Skidmore, Thakeray,Farley, 1998).

In India as a whole, over 75% of the economically dependent are supported by their children and grand children (NSSO 52 round, 1999). Another study by ESCAP indicates the picture is almost similar in China, Indonesia and Thailand with children providing bulk of support to the elderly. (Bongarts, Zachary Zimmer, 2001). But in developed (mostly in Western countries) countries, instead of familial support, institutional support has a strong base for the elderly people.(US Census Bureau; An Ageing World ,2001).

Living arrangement is an important aspect in the social life of the elderly. It was that in the ASEAN countries very few elderly lived alone. The great majority were living with one or more of their children. Furthermore, a majority of those currently living with one or more of their children. Again, a majority of these currently in working ages expected support in their old age from their children.

Another finding is that in some developing countries expectation of support differed according to the sex of the child. In the republic of Korea, India and Bangladesh, for example, much more was expected from sons. But contrary to this, ASEAN countries, however, support was expected equally from sons and daughters. (UN Report, 1988).

The most commonly used indicators to describe the living arrangements of the elderly person, are proportion of person living alone, co-residence rate and headship ratio.

Loneliness in old age is a painful fact of life. A cross country study of living arrangements of elderly person in the developing world covering Africa, Asia and Latin America reports 8.8% of older individuals living alone across all countries and the average proportion of living alone is nearly twice as high for women.(Bongaarts ,Zeimmer, 2001).

Old age is generally equated with sickness. The old persons are more susceptible to illness because of lower resistance to disease and other ailments. Ageing was found to be directly related to disability and decreased activity (Haber, 1970, Doagh,1982) .But this is not true in all cases. According to a study, age cannot be treated as disease ,some old people are generally restricted in their mobility, others are able to maintain themselves in the ordinary activities of life. (Shanas, 1968).

Different age groups in the population have widely different probabilities to sickness and medical need. Health care costs are substantially higher than all other age groups .This general pattern is true in the developed as well as in the developing countries. (Jones,1975). Another study finds that average health expenditures by people in developed countries in the age group 65-79 years are double the expenditures of all age groups and the difference is even higher among the very old. (Tabah, 1987). Similar studies support this view from a survey of seven OECD countries (U.S.A, Japan, Italy, Australia, Canada, Finland and Greece) that age Structure has a positive significant effect on per capita health care expenditures. (Muthy, Ukpolo,1994).

But a study from a different perspective failed to show any positive correlation between age structure and health care spending (Gerd tham, Jesoggard, Fedrik, Anderson, Jonsson, 1992). On the other hand no data on cost pattern on health care by the elderly

exist in developing countries or in India. This gap can be future research area in developing countries.

In developed countries much debate is now focused on changes of age specific death rate at old ages. It is due to rapid improvement of medical science. But it is considered as a “nightmare scenario” for health and social planners due to the nature of morbidity and the potential costs of care. (Kane,1990). He opines that it a major current problem for the social welfare concerns the costs incurred in maintaining older people.

Another study shows that healthy ageing is increasingly feasible with specific health and social interventions to ensure a reduction in the periods of ill health among elderly persons. According to this position, a person could live disease free and fully active until natural death from biological ageing (Kane,1990).

However from different perspective, another study (Gruenberg, 1977; Kramer, 1980) reveals ‘failures of success’ in late life, have argued that an extension of life essentially means a ‘rising pandemic’ of chronic disease, both physiological and psychological. An extension of life span, according to this argument, would mean increasing numbers of people surviving with chronic and progressive diseases, with particular implications for health and social services. But Manton(1982), Kane(1990) and Lopez(1992) suggest that for a real appreciation of the personal and social impact of years added to over all life expectancy, there needs to be a much better under-standing of the relationship between mortality and morbidity and in particular of the changing patterns of morbidity at older ages.

Elderly in the developing world have largely being cared for by the extended family where they have been able to retain both their role and their status. However factors

such as increased social mobility due to urbanization and social change have had a negative impact on the life of elderly (Robeldo, 1985).

Several studies have given focus on the survival of the traditional family as a successful mode of ageing in sub-Sahara Africa. There has been conflicting perspective on the role of family caring for ageing relatives. Extended family support continues even if it is over burdened and with insufficient resources in absence of other measures to be a primary support system for vulnerable member. (Kilbride, 1985; Kilbride and Kilbride, 1990; Well, 1966).

Migration as well as urbanization plays an important role in generating pockets of elderly people; for instance, differential emigration left behind in the country side. In some countries older people have been retuning home from after retirement. This has important consequences for agricultural productivity, the provision of health and social services, and readaptation of returners to an environment with which they are often no longer familiar. (U.N.1985). In the developing world the Caribbean is the region with highest proportion of elderly people resulting from migration of the young and return of the elderly. (Kimselle,1988). In addition it is increasingly evident that mass migration generated by war and political turmoil in southern Africa, Afghahisthan, Yogoslovia and Combodia, in the late twentieth century, substantially and disproportionately affected elder people. (Godfrey,Kalche,1989; Tout 1989,UN 1985).

Literature on Ageing in India

In the Indian initiation of research in the field of ageing and aged were started in the late sixties by a few psychologists, sociologists and medical and biological scientists. For the

first time, some social scientists started publication of Indian Journal of Gerontology in the late sixties to cover the studies of ageing population in rural and urban setting (Sati, 1988).

Some challenges for Indian elderly

Changing of the population structure in the age composition in India poses some challenges for the aged persons. Many elderly persons suffer from social, economic and health insecurity in old age and fall short of the basic amenities (Rajan, 2004;Alam, 2005). The burden of disease and lack of access to proper health care is a challenge to the aged persons in India (Alam, 2005; Dey, 2000). Majority of the elderly suffer poverty in their old age, as they are mostly part of poor households during the course of their young ages (Rajan, 2000).With increased migration from rural to urban society , the elderly are deprived of familial and social care in their later life. The elderly care is a major challenge for the family, especially for young women, and can affect the mobility of the members of the family in general (Rajan, S. I.; 2001)

Besides these problems, some studies find that the elderly are deprived of property that can act as a security (Barrientos, A. M; 2003). A major portion of the elderly are found to be economically dependents and compelled to work even when they are too old to earn living. (Kinsella and Velkolf, 2001).

Raj and Prasad (1971) conducted a survey to know dependency ratio, marital status of the elderly, socio-economic status, personal habits and addiction, living arrangement and the health status of the elderly population in the district of Lucknow, Uttar Pradesh. The result shows that 66.9% are poor. 52% still held the position of head of the family. 88% were suffering from various disabilities, such as, blindness, paralysis of lower limb,

31.3% were found depressed because of death of spouse, children's infirmity, crop failure and indebtedness.

Another study shows the happiness and unhappiness in old age. The study suggests that happiness in old age depends to a great extent upon busy life, good health, absence of the paucity of funds, presence of spouse and social contacts etc. (Sharma, 1971; Murthi, 1970)

Another study shows that after retirement the problem of the old people increases many folds- greater deprivation, loss of social status and prestige in general and family in particular. Socialization is important for the elderly population to remain physically and mentally fit for the remaining part of their life. The study also shows that socialization of old people in India differs from the west with respect to the rural urban setting of old people in their occupational, educational and cultural back ground. (Singhi, 1970).

Adjustment problems of retired person deserve attention in ageing studies. A number of empirical studies were conducted to explore the factors associated with successful adjustment in old-age (Raghani , Singhi ;1970).

Another study on personality traits of adolescents, adults and old persons indicates that no significant changes took place in the personality traits of the adolescents compared to the traits of the adults, whereas significant changes were noticed during old age. (Shanmugam,1970).

A comparison of the past and the present Indian social structure helps better understandings of the changing status of elderly population in India. In the past, the structure of the society was such that the aging process did not put any obstacle in the

way of older persons feeling, roles, and enchanted status. But in recent times, the structure of the society has been undergoing a fundamental change for which the older persons are being dislodged from their roles of higher status. However, there are still some quarters particularly in the rural areas where the older people are commanding their traditional esteem. (D'Souza,1969) In Udaipur, Rajasthan, the majority of elderly people,(64%) facing deteriorative changes in their social life as they had cut down even the necessity of life (such as accommodation, clothing, food items etc). Nearly 60% had revealed that they keep contacts once in a week with their city dweller relatives and 60% are of the view that they are not socially isolated (Chadha, Narender, 1982).

Current interventions in health housing and social sectors and the role of NGO in developing such services can bring solutions to the various problems of the elderly. Heritage Hospital in Hyderabad can be a model in India and could also become a model for other developing countries. Heritage is one of the few comprehensive programmers of geriatric care units, extended home care service, other home and community based care via" service clubs," community outreach, training and consultation. (Gangadharan,1990). Another service provider agency for old persons is Help Age India. A major focus is on development via income generation, micro credit and other programmer to strengthen participation of elders in society.

1.11 Research Gap and Need for the Present Study

It is evident from the above review of literature that there are not sufficient studies to cover all the dimensions of the problems of the elderly people in Assam. The literature on elderly population in Assam is very limited to address some of the relevant issues

like awareness regarding legal provision and beneficiary schemes which are available for them, work participation, gender issues in the study of elderly population and unmet need of the elderly in respect of care and social support.

On the basis of the gaps mentioned above, the present study intend to frame the following objective and research questions so that the study may cover the above mentioned gaps of the research area.

1.12 Objective of the Study

Keeping in view the above background and the scope of studying, we propose to high light the following issues.

a) To analyze the socio-economic and demographic profile of ageing in the district.
b) To investigate the determinants of living arrangement of the elderly people in the undivided Kamrup district.
c) To examine the effectiveness of the government social security policies and measures in meeting the unmet needs of the elderly in the selected district.
d) To study the level and nature of the work participation of the ageing population in the proposed district.
e) To identify the factors affecting the health status of the elderly in the selected district.
f) To focus on the specific problems faced by the aged women vis-à-vis their male counterpart.

1.13 Research Questions

In relation to the above objectives following research questions are taken up for the study. They are -

a) The proposed study will investigate whether elderly are aware of the legal provisions which are for the protection and benefits of the elderly.

b) Another point of query will be to understand the vulnerability of the elderly women against the background of the specific social and economic aspect.

1.14 Materials and Methods

The present study is based on empirical work which examines the multidimensional aspects of the elderly population in the undivided Kamrup district of Assam.

1.14.A Sources of Data

Primary and secondary data have been used to realize the objectives of the study with all its well-known limitations. Primary data has been collected for the period 2015-16. For collection of primary data a survey has been conducted in the selected district through a well structured questionnaire to get the required information**.** The data was collected from four blocks from rural area(Rangia,Boko, Sonapur and Chandrapur) and three urban areas (Guwahati city, Palashbari and Rangia) of the undivided Kamrup. Since Assamese is the common language to interact with all sections of the elderly in the selected study area, the interview was conducted in the Assamese language. On the other hand, the secondary data has been collected from published sources like UN reports and other sources of International Data on Ageing .Governmental reports such

as Census reports of India, NSSO Surveys, Statistical Handbook of Assam, accessing the Internet, seminar papers, books, Journals etc.

1.14.B Details of the Sample Coverage

The proposed study intends to make a comparative analysis of rural–urban differentials with respect to different dimensions of ageing population such as gender, place of residence, health status, living arrangements etc. To include all these aspects in the proposed study, the undivided Kamrup district (includes both Kamrup Metro and Kamrup district bifurcated in 2003) is selected as the study area based on 2001 census. The magnitude of the problem of the elderly population becomes more pronounced with the urbanization. The selection of the undivided Kamrup district with highest urbanization (census report of 2001 and 2011) in the state will give us a scope for the rural urban differential study of the elderly in the district.

According to Census 2001, the total population of Undivided Kamrup district was 2522324 (64 percent in rural area and 36 percent in urban area) and total elderly population was 143125 (i.e., 5.67 percent). Distribution of elderly population by place of residence was 67.80 percent in rural area and 32.20 percent in the urban area.

A purposive cum multi stage sampling design has been followed. In the first stage, for the rural sample, two sub divisions of the district have been chosen. From each sub-division two development blocks have been selected randomly. Again, from each selected block two villages have been selected for the purpose of our study. In the next stage, from each selected village 25 households (each house-hold at least having one

elderly member) have been drawn by simple random sampling method. Finally, a rural sample of 200 households has been drawn for the proposed study.

For the urban sample, in the first stage, Municipality areas (Guwahati, Palashbari and Rangia) have been selected purposively. In the next stage, 50 households (each household at least having one elderly member) have been drawn purposively by simple random sampling method. Thus, the total size of the urban sample has been drawn 150 households and the total sample size of the proposed study has been confined to around 350 households. **Table-1.35** shows the distribution of total sample of households by blocks/ villages/ towns.

Table-1.35

Distribution of Total Sample: Block /town/village

	Development Blocks	**Villages/ Town**	**House-holds**	**Total Elderly**
Rural Sample	Rangia Dev.block	Kanikuchi village	25	39
		Bongaon village	25	33
	Kamalpur Dev. Block	Bargaon	25	42
		Bezera	25	33
	Chandrapur Dev.block	Panikhati village	25	39
		Chandrapur village	25	35
	Rani Dev.block	Sikarhati	25	29
		kahikuchi	25	43
Urban Sample	**Town/city**	Guwahati city	50	90
		Palash bari town	50	65
		Rangia town	50	79
	Total		**350**	**527**

Source : Field survey data

1.14.C Analytical framework

To study the objectives of the present study, depending on the secondary and primary data, different appropriate statistical tools like tabulation, percentage analysis, bar diagram, pie diagrams, averages and ratios, chi-squares has been used.

To assess the determinants of work participation amongst the elderly respondents, binary regression is carried out in the **Chapter- 4.**

Similarly, to investigate the determinants of the activities of independent daily living of the elderly, an ordered logit regression has been carried out in the **Chapter- 5** of the present study.

1.15 Plan of the Study

There are altogether eight chapters including the present introductory as mentioned below.

Chapter-1 **Introduction.**

Chapter-2 **Profile of the Study Area and Socio-economic and Demographic Background of the Elderly Respondents**

Chapter-3 **An Analysis of Living Arrangement of the Elderly**

Charter- 4 **Work Participation of the Elderly**

Charter- 5 **Health and Functional Status of the Elderly**

Chapter-6 **Awareness on Legal Provisions & Social Security Measures with Some Issues of Unmet Need of the Elderly**

Chapter-7 **Female Elderly: Issues and Concerns**

Chapter–8 **Summary of Findings and Conclusion**

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Chapter-2

Profile of Undivided Kamrup District

2.1 Introduction

Kamrup is one of the oldest districts of Assam. British government created this district in the year 1934 (the legal status of the district was defined by act II of 1835), but later on Kamrup district has been fragmented to a number of smaller administrative units creating new districts as Barpeta in 1983 and and Nalbari in 1985. Again, this district was fragmented in 2002, into two districts – Kamrup and Kamrup Metro. However, for a better understanding of rural-urban differentials, our study is covering entire undivided Kamrup district (as per the census 2001).

Population

According to the Census Report 2001, Kamrup has the highest number of population. The total population of the district (both rural and urban) is 25, 22,324 of which 16, 14,104 (63.99%) are rural population and 9,08,220 (36.0%) are urban population. The decadal growth rate is 26.11% (1991-2001). Out of the total population of the district, 13, 26,981 (52.61%) are male and 11.95.343 (47.39%) are female: the density of population in the district is 579 per sq km with sex ratio being 901. The total population of Assam is 2, 66, 38,407 and the district shares 9.44% of the total population of the state. The literacy rate of the district is 74.2 percent, of which 81.24 percent are male and 67.31 percent are female.

Being the capital district of Assam, Kamrup attracts a large number of people within and outside of the state for various administrative purposes, trade and commerce and for many other purposes. Guwahati (Dispur) the capital city as well as the nerve centres of Assam and the gateway of the North Eastern region is functioning as the administrative head – quarter of the district.

Location

The district Kamrup lies between $25^0$43' and $26^0$53' north latitudes and $90^0$39' and $92^0$12'20"east longitudes, covering a geographical area of 4345 sq km which accounts for 5.5 percent of the total geographical area of the state. The district is bounded by Darrang and Nagaon districts on the east, Nalbari along with some parts of Goalpara district on the west. Bhutan is located on the Northern front. While the southern side is bounded by Meghalaya. The mighty river Brahmaputa and its tributary rivers ,namely Barnadi, Puthimari, Sessa, Baralia and Nona are flowing through the district. Kamrup has two sub divisions, 1 city, 9 towns, 15 revenue circles, 1393 census villages, 177 gaon ponchayats, 17 Anchalik panchayats and 17 develoment Blocks viz Dimoria, Chandrapur, Rani,Rampur, Chayani, Chhaygaon, Goroimari, Bongaoan, Boko, chamaria, Hajo, Sualkuchi, Bezera, Kamalpur, Bihdia-Zajikona, Goreswar and Rangia.

2.2 Socio- Economic and Demographic Profile of the Field Study Area

Kamalpur Block is one of 17 blocks (CD) in the undivided Kamrup District of Assam. It is the one of the four selected blocks in the present study. There are about 115 villages in the Kamalpur Block (Census, 2011). It is situated on the north bank of the mighty river of Brahmaputra and it is around 47 kilometers away from the District head quarter,

Guwahati. Total population of the block is 82667 and the total number of males and females of the block are 43379 and 39288 respectively. Density of population of the block is 572.37 per square kilo meter. The literacy rate of the block is 83 per cent. From Kamalpur Block two villages, namely- Bargaon and Bezera were selected at random for the purpose of the present study.

Bargaon is a village under the Kamalpur Block of undivided Kamrup District in Assam. The village is situated at a distance of 6 km away from Kamalpur and 46 km away from district Headquarter Guwahati. The total geographical area of village is 232.31 hectares. There are all total 453 house-holds. All total, 2227 people inhabit in the Bargaon village. Amongst them 1172 are males and 1055 are females. Total working population in the village is 928. Out of which 596 are males and 332 are females. The literacy rate of the Bargaon village is 77.34 per cent and the male and female literacy rates are 83.67 per cent and 70.75 per cent respectively.

Bezera is the second selected village from Kamalpur Block in the undivided Kamrup district of Assam. It is situated 55 km away from district headquarter. As per Census 2011, the total geographical area of village is 327.05 hectares. The village has a total population of 1,192 people and about 251 households; the sex ratio of the village is 969 which is higher than the state average (958). The literacy rate of Bezera is estimated at 84.88 per cent while male and female literacy rates are 94.09 per cent and 85.53 per cent respectively.

Rangia Block falls under the undivided Kamrup district of Assam. It is the second selected block in the present study. According to 2011 Census, there are 84 villages in the block. Rangia block has 132,000 people and 28,567 households. Total male and

female population in the village is, 68,583 and 63, 417 respectively. From Rangia block, two villages namely, Ban Gaon and Kanikuchi villages were selected.

Bangaon Village is located in the Rangia Block of undivided Kamrup district in Assam. It is located at a distance of 83 kilometer away from the District Headquater. Total area of the village is 224.99 hectares and total population is 2258. The total number of households of the village is 479. The village has 1154 males and 1104 females.

Kanikuchi Village is another village selected from the Rangia Block in the undivided Kamrup District of Assam. The village is located at 52 kilo meters away from the Sub-division Headquater and 102 kilo meters away from District Headquater, Guwahati. Total geographical area of the village is 209.43 hectares. Total population of the village is 1,340 while, male and female population are 712 and 628 respectively. There are about 319 households in the village.

Chandrapur Block is the third selected block in the present study area. There are 44 villages under the Block. All total 60568 people live in this Block; among them 31593 are male and 28975 are female(2011 Census). Total literacy rate of the Block is 64.5 per cent. Literacy rates of the male and female are 56.3 per cent and 43.7 per cent respectively. People inhabiting in Chandrapur depend on multiple skills, total workers are 23964 out of which men are 18176 and women are 5788. A total of 3164 Cultivators are depended on agriculture farming, out of which 2814 are cultivated by men and 350 are women respectively. About 1401 people are engaged as a agricultural labour in Chandrapur. Male constitute 70 per cent and female constitute 30 per cent of total agricultural labour force in the Block. Two villages randomly selected for the purpose of the present study are **Panikhati Village** and **Chandrapur Village.**

Panikhaiti Village falls under the Chandrapur Block in undivided Kamrup district of Assam, India. Panikhaiti Village has a population of 3817 of which 1956 are males and 1861 are females. Total Households in the village are 752 (2011 census). Total literacy rate of Panikhati Village is 66 per cent. Male literacy rate is 55.7 per cent and female literacy rate is 44.3 per cent. People of Panikhaiti Village depend mostly on multiple skills. Total workers are 1380 out of which men are 1085 and women are 295. Total 109 Cultivators are depended on agriculture farming out of 91 are cultivated by men and 18 are women. 447 people works in agricultural land as a labour in Panikhaiti, men are 319 and 128 are women.

Chandrapur is a Village in undivided Kamrup district of Assam, India. Chandrapur village has a population of 545 of which Males are 257 and Females are 288. Total Households in this Chandrapur are 131 as per 2011 census. Literate people are 180 out of 104 are male and 76 are female. People living in Chandrapur depend on multiple skills, total workers are 315 out of which men are 166 and women are 149.

Rani Development Block falls under the undivided Kamrup District of Assam. It is about 30 Kilo meter away from Guwahati city and 9 Km from Lokapriya Gopinath Bordoloi(LGB) International Airport. It is directly connected to Guwahati city and the Mirza town. The location of the Block is also one of the main entry points to Assam from Meghalaya. Total population of the Block is 67514 out which 35999 are male and the female population are 31515. Total number of household is 16,589 (Census, 2011). Two selected villages under Rani Community Development Block are Sikarhati and Kahikuchi.

Sikarhati Village under Rani Block in undivided Kamrup district of Assam has a total population of 2357 people. Total number of male is 1235 and total number of female is 1122. The village has 589 households.

Kahikuchi Village which is another selected village from Rani block in undivided Kamrup district in Assam, has a total population of 3548 (Census, 2011). Out of this total number of males is 1908 and female is 1640.The total number of households of village is 602.

Rangia town is located in Rangia Sub-Division of undivided Kamrup District. The total area of the town is 9.25 square kilo meter. There are about 6215 households in the town total number of people inhabiting in the Rangia Town is 27889. Of this total 14466 people are males and 13,423 are females. Total literacy rate of the town is 79.8 per cent. The male and female literacy rates in the town are recorded 53.97 percent and 46.02 per cent respectively.

Palashbari Town is the second selected town in the selected district of the present study. Palasbari had a population of 4741. Of this total population, males constitute 51% of the population and females 49%. The literacy rate of the population of Palasbari is recorded 80% .Male literacy rate is found to be 85% while, female literacy rate is 75%. In Palasbari, 9% of the total population is found under 6 years of age.

Guwahati is a major city in the eastern India and it is situated on the South Bank of the mighty river Brahmaputra It is considered as the gateway to the North-East Region

(NER) of the country. Dispur, the capital of the state of Assam is situated within the city. Total area of Guwahati city is 867.25 kilo meter (Census, 2011). There are 60 municipal wards in the city. The city is considered as one of the fastest growing city in India. The city has also experienced expanding growth of population over past few decades. Total population of the city is 957,352 and male population constitutes 51.7 per +cent population of the city is 957352. Out of this total population, male population constitutes 51.7 per cent and female population constitutes 48.3 per cent. Total literacy rate of the city is 82.9 per cent while male and female literacy rate are estimated at 53.3 per cent and female literacy rate at 46.7 per cent (Census, 2011). The sex ratio of Guwahati city in 2011 is estimated at 933 per 1000 males. The child sex ratios estimated at 940.

2.3 Socio-Economic and Demographic Background Profile of the Elderly Respondents

The socio-economic and demographic background of the respondents refers to a set of variables that helps us to have a proper assessment of the problems of the elderly people. Hence, the study of socio–economic and demographic background of the respondents is important in the studies of ageing population. In this section, an attempt has been made to study the socio–economic and demographic background of the respondents. The selected socio-economic variables for our present study are place of residence, type of family, income of the respondents, educational level, occupation, broad age category ,marital status ,current Income status ,gainful employment, types of work, living arrangement, dependency status, health condition, insurance coverage of the elderly, old age problems other than health, happiness, awareness on legal provisions and social security, Activities of Daily living (ADL), social contact etc.

Place of Residence

Place of residence is an important variable to assess the different conditions of the elderly people. Rural–urban differential analysis has a far reaching effect on the research of ageing population.

Table -2.1

Sample distribution by place of residence

(figures in parenthesis show percentages)

Elderly population	**Rural**	293 (55.6)
	Urban	234 (44.4)
	Total	**527 (100)**

Source: Field survey data of the present study (2015-16)

Table-2.1 shows the distribution of the elderly population of the present study. Out of 527 respondents, 293 respondents were from rural area while 234 respondents were in the urban area. In terms of percentages, the figures were 55.6 and 44.6 in the rural and urban area respectively.

Table -2.2

Sample distribution by sex and place

(figures in parenthesis show percentages)

Sex	Rural	Urban	Total
Male	121 (41.2)	110 (47)	231 (43.8)
Female	172 (58.8)	124 (53)	296 (56.2)
Total	**293 (100)**	**234 (100)**	**527 (100.0)**

Source: Field survey data of the present study (2015-16)

The distribution of elderly population by sex and place in the present study shows (**Table-2.2**) that out of 527 elderly respondents, 43.8 percent were males and the rest 56.2 percent were females. Male elderly respondents constituted 41.2 percent (as

against 58.8 percent of female elderly) in the rural area and 47 percent (as against the 53 percent of female elderly) in the urban area.

Types of Family

The impact of modernization in the socio-economic life of the people has caused a big structural change i.e., in the family life of the Indian society. Indian joint family system has been found to break up into nuclear family set up. Kamrup (undivided) district of Assam has been found to be no exception to this.

Table 2.3

Types of family

(figures in parenthesis show percentages)

Types of family	Rural	Urban	Total
Nuclear	277 (94.4)	220 (94.0)	**497 (94.3)**
Joint family	16 (5.6)	14 (5.9)	**30 (5.7)**
Total	**293 (100.0)**	**234 (100.0)**	**527 (100.0)**

Source: Field survey data of the present study (2015-16)

In the field study area (**Table-2.3**), it is observed that majority of the elderly belonged to the nuclear family (94.3) while, a negligible percentage of elderly belonged to joint or extended family (5.7). The rural urban break-up of the family types in this regards also exhibits the same trend.

Broad Age Group of the Respondents

Table 2.4

Percentage of respondents by broad age groups: Rural-Urban

(figures in parenthesis show percentages)

Age group	Rural	Urban	Total
60-69 years	190 (64.8)	119 (50.8)	309 (58.6)
70-79 years	75 (25.6)	77 (32.9)	152 (28.8)
80 years and above	28 (9.5)	38 (16.3)	66 (12.5)
Total	**293 (100)**	**234 (100)**	**52 7(100)**
Mean age	**68.5**	**70.3**	**69.4**

Source: Field survey data of the present study (2015-16)

In our present study, age of the respondents has been divided into three broad age groups i.e., 60-69 years, 70-79 years and 80 years and above. Segregation of age of the elderly population into broad age groups is of great importance in the study of ageing population.

Table-2.4, shows almost two third elderly of the present study belonged to 60-69 years of age group while, only 12.5 percent were found to be in the higher age group (i.e. 80 years and above).So far the rural urban break-up is concerned, the same trend has been observed .However, the proportion of the elderly in the younger age group (60-69 years) was observed to be higher compared to their rural counterparts. The estimated mean age of the elderly as a whole in the present study area was found to be 69.33 years while, in the rural and the urban area, the estimated mean was 68.35 years and 70.25 years respectively.

Education

Table-2.5, shows the education levels of the respondents of the district. Education is an important variable to observe its impact on different aspects of the life of the elderly population.

Table-2.5

Elderly persons with educational qualification place of residence

(figures in parenthesis show percentages)

Educational level	Rural	Urban	Total
Illiterate	116(39.6)	05(2.1)	**121(23.0)**
Educated Up to primary	75(25.6)	18(7.7)	**93(17.6)**
Educated Up to middle	20(6.8)	9(3.8)	**29(5.5)**
Educated Under HSLC	62(21.2)	48(20.5)	**110(20.9)**
Passed HSLC/HS	15(5.1)	75(32.1)	**90(17.1)**
Graduate & above	05(1.7)	79(33.8)	**84(15.9)**
Grand total	**293(100)**	**234(100)**	**527 (100.0)**

Source: Field survey data of the present study (2015-16)

Out of the 527 elderly, almost one fourth were found to be illiterate and most of them were from the rural area. Contrary to this, the proportion of elderly attained education up to the level of graduation and above were found to be 15.9 percent and most of the were from urban area. A striking gender gap in literacy has been observed to be present in the present field study area.

Marital Status

Marital status is another important determinant of the wellbeing of the elderly. The data on marital status of the elderly indicate many important features of their health. Several studies from different parts of the world on marital status of the aged people, have found that, marital status is positively correlated to the health of the aged people.

Table-2.6

Marital status of the respondents

(figures in parenthesis show percentages)

Marital status	Rural	Urban	Total
Currently married	159 (54.3)	131 (56.0)	**290 (55.0)**
Unmarried	5 (1.7)	11 (4.7)	**16 (3.0)**
Widower	21 (7.2)	18 (7.7)	**39 (7.4)**
Widow	99 (33.8)	61 (26.1)	**160 (30.4)**
Divorced / separated	9 (3.1)	13 (5.5)	**22 (4.2)**
Grand total	**293 (100.0)**	**234 (100.0)**	**527 (100.0)**

Source: Field survey data of the present study (2015-16)

The current marital status of the elderly in our present study as revealed in the above **Table-2.6,** states that more than half of the total respondents (55 percent) were currently married. Gender gap has been observed in terms of current marital status of the elderly (30.4 percent of widows as against 7.4 percent widowers). Comparatively a higher proportion of widow i.e., more than three fifth of the total of 160 widows were

found to be in the rural area. On the contrary as expected, majority of the divorcees and those separated were in the urban areas.

Current Income Status

Income level indicates the economic capacity of an individual; hence, it is recognized as one the prime socio- economic indicators to assess the standard of living of individuals. It is not easy to assess the house hold income especially in rural area. Lack of proper accounts regarding their income is the main problem to assess their income in rural area. Individual monthly income as reported by the respondents is considered in our present study.

Table- 2.7

Elderly with current monthly income by residence

(figures in parenthesis show percentages)

Level of income	Rural	Urban	Total
< Rs. 5000/	159 (54.3)	55 (23.5)	**214 (40.6)**
Rs.5000/ to Rs.10000/	66 (22.5)	78 (33.3)	**144 (27.3)**
Rs.10,000/ to Rs.20000/	55 (18.8)	61 (26.1)	**116 (22.0)**
Rs.20000/ & above	13 (4.4)	40 (17.1)	**53 (10.1)**
	293 (100.0)	234 (100.0)	**527 (100.0)**

Source: Field survey data of the present study (2015-16).

In the above **Table-2.7,** it is observed that out of the total of 527 respondents, 40.6 per cent earned less than Rs 5000/- per month. 27.3 per cent of the respondents earned Rs. 5000/ to Rs 10.000/-. In the upper income group i.e. Rs.10000/ to Rs 20,000/- and above Rs 20,000/- the respondents percentages were 22 and 10.1 respectively. It is evident from the **Table- 2.7,** that in the higher level of income, percentage of respondents from urban area was more than the rural area.

Gainful Employment

In our present study, gainful employment refers to the people who engage beyond their retirement age (i.e. 60 years of age and above) for earning money either voluntarily or under compulsion.

Table-2.8

Respondents with gainful employment by place of residence

(figures in parenthesis show percentages)

	Rural	Urban	Total
Yes	120 (41.0)	70 (29.9)	**190 (36.1)**
No	173 (59.0)	164 (70.1)	**337 (63.9)**
Total	**293 (100.0)**	**234 (100.0)**	**527 (100.0)**

Source: Field survey data of the present study (2015-16)

In the above **Table-2.8,** out of the total of 527 elderly from our present study, 190 respondents (i.e. 36.1 per cent) were engaged in gainful employment. While, 41 per cent of the elderly respondents in the rural area were engaged in gainful employment, the corresponding figure for urban area was 29.9 per cent.

Types of Work

In the ageing study types of work of the elderly people has a significant impact in wellbeing of the life of the elderly. The following **Table- 2.9** shows the types of work of the respondents in our study.

Table-2.9

Percentage distribution of Elderly engaged in various types of works

(figures in parenthesis show percentages)

Types of works	Rural	Urban	Total
Farming	84 (73.0)	--	84 (44.2)
Self employed	11 (9.6)	38 (50.7)	49 (25.8)
Daily wage	11 (9.6)	13 (17.3)	24 (12.6)
Working as an employee	09 (7.8)	24 (32.0)	33 (17..4)
Total	**115 (100.0)**	**75 (100.0)**	**190 (100.0)**

Source: Field survey data of the present study (2015-16)

In the above **Table-2.9,** it is observed that out of the employed 190 respondents, 44.2 per cent was found to be engaged in farming followed by 25.8 per cent self employed elderly persons.

Living Arrangement

Living arrangement is considered as an indicator of the wellbeing of the elderly. Living with their own people in their later life ensures care and support to them.

Table-2.10

Distribution of Elderly by living arrangements
(figures in parenthesis show percentages)

Living Arrangements	**Total**
Living alone	30 (5.7)
With spouse	134 (25.4)
With spouse and children and grand children	149 (28.3)
With children and grand children	106 (20.1)
With relatives	85 (16.1)
With non-relatives	23 (4.4)
Total (N)	**527 (100.0)**

Source: Field survey data of the present study (2015-16)

In **Table-2.10,** it is observed that majority of the elderly were found to be living with their spouse, with spouse and children and grand children, with children and grand children. The proportion of elderly living alone and living with non-relatives were negligible. A significant observation from our field survey is that out of 527 elderly a total of 85 respondents (16.1 percent) were living with their relatives.

Dependency Status

In our study, dependency refers to an economically dependent person. It bears an important place in the analysis of the ageing study. It is believed that economically independent elderly can live a better life compared to their counterparts. In the present study, we categorised the dependency status on the basis of the self reported statement of the elderly respondents and economically independent means a person is capable of managing the financial expenditure by himself without seeking assistance from anyone. Similarly, partial dependency means the elderly is only capable of managing a small portion of his total financial expenditure and fully dependent elderly are referred to the elderly who cannot manage their financial expenditure for themselves and also included the elderly respondents below poverty line in this category. In our study, partially dependent, fully dependent and the BPL card holders are clubbed as the economically dependent elderly.

Table-2.11

Dependency status of the elderly : Rural-Urban

(Figures in parenthesis show percentages)

	Rural	Urban	Total
Independent	87(29.7)	157(67.1)	**244 (46.3)**
Dependent	206(70.3)	77(32.9)	**283(53.7)**
Total	**293 (100.0)**	**234 (100.0)**	**527 (100.0)**

Source: Field survey data of the present study (2015-16)

In **Table-2.11,** out of 527 respondents a total of 244 respondents are economically independent (46.3 per cent). The rural-urban break-up of the, economic dependency status of elderly shows that majority of the respondents in the rural area, compared to their urban counterparts. Elderly of the urban area were found to be more economically independent (67.1 percent).

Table-2.11.a

Rural-Urban dependency of the elderly : Fully / BPL/ Partial: Rural-Urban
(Figures in parenthesis show percentages)

Dependent	Rural	Urban	Total
Partially dependent	25 (12.1)	16 (20.8)	**41 (14.5)**
Fully dependent (Other than BPL)	49 (23.8)	23 (29.9)	**72 (25.4)**
Elderly BPL	132 (45.1)	38 (16.2)	**170 (60.1)**
Total	**206 (100.0)**	**77(100.0)**	**283 (100.0)**

Source: Field survey data of the present study (2015-16)

Out of the total of 283 dependent elderly, three fifth was BPL card holder, one fourth was fully dependent and 14.5 percent was found to be partially dependent (**Table-2.11a**).

Sources of Income of the Economically Independent Respondents

Table-2.12 exhibits sources of income of the economically independent elderly of our study. Pension (i.e. 151 respondents) and the income from property (i.e. 160 respondents) are the main sources of income of the elderly respondents. The other sources of income of the respondents were- savings, salary (informal sector) and business. More than 80.8 per cent pension earners were in the urban area, while, it was only 19.2 per cent in the rural area. Only 9 respondents were earning their income as daily wage labourer.

Table- 2.12

Sources of Income of Economically Independent Elderly: Rural-Urban
(figures in parenthesis show percentages)

	Rural	Urban	Total
Pension	29 (19.2)	122 (80.8)	**151 (100.0)**
Salary (informal sector)	15 (27.8)	39 (72.2)	**54 (100.0)**
Daily wage labour	09 (100.0)	--	**09 (100.0)**
Savings	10 (14.3)	60 (85.7)	**70 (100.0)**
Property	83 (50.9)	77 (49.1)	**160 (100.0)**
Business	14 (28.6)	35 (71.4)	**49 (100.0)**

Source: Field survey data of the present study (2015-16)

It is evident from **Table-2.12,** that, income from savings as their source of income (85.7 per cent) was more pronounced in the urban area compared to the rural area.

Perceptions Regarding Old Age Problems other than Health

Table-2.13

Perceptions regarding old age problems other than health
(figures in parenthesis show percentages)

Old age problems other than health	Total
House hold	289 (54.8)
Economic	356 (67.6)
Emotional	398 (75.5)
Prestige	353 (67.0)
	N=527

Source: Field survey data of the present study (2015-16)

Emotional problems as reported by the elderly in the present study (**Table-2.13**) was emerged as the major problem (75.5 per cent) in the old age, followed by economic problem (67.6 per cent), prestige problem (67 per cent) and the house hold problem (54.8 per cent).

Perceptions of the Respondents Regarding the Feeling of Being an Aged Person

Table - 2.14 depicts the perceptions of the respondents regarding the feeling of being an aged person .Most of the respondents (i.e.67.5 per cent) reported not happy. Smaller proportion (i.e.22.2 per cent) of the respondents were happy while 13.3 percent cannot say regarding the feeling of being an aged person.

Table-2.14

Perceptions of the Elderly regarding the feeling of being an aged person
(figures in parenthesis show percentages)

	Rural	Urban	Total
Happy	56 (19.1)	41 (17.5)	**97 (18.4)**
Unhappy	182 (62.1)	158 (67.5)	**340 (67.5)**
Cannot say	55 (18.8)	35 (15.0)	**90 (17.1)**
Total	**293 (100)**	**234 (100)**	**527 (100)**

Source: Field survey data of the present study (2015-16)

The same trend has also been observed so far as the rural urban differential is concerned. The percentages of unhappy respondents were found to be more than 60 per cent in both the areas. Respondents in the rural area (19.1 percent) revealed happiness of being the old person, which was, higher than the urban areas (13.3 per cent).

Another significant finding from the above table is that, a major proportion (58 per cent) of 97 respondents, reported to be happy of being old person, belonged to the rural area.

Social Contact

Social contact is very important aspect in the later period of life. It is also considered as one of the key issues in the study of ageing.**Table-2.15** shows social contacts of the respondents in our present study.

Table-2.15

Social contacts of the Elderly by place of residence
(figures in parenthesis show percentages)

	Rural	Urban	Total
Yes	140 (47.8)	59 (25.3)	**199 (37.8)**
No	153 (52.2)	175 (74.7)	**328 (62.2)**
Total	**293 (100)**	**234 (100)**	**527(100)**

Source: Field survey data of the present study (2015-16)

As expected, socialization among the elderly is more evident in the rural areas as compared to the urban areas.

2.4 Health Profile of the Elderly Respondents

Health Perception of the Elderly

Table-2.16

General Health condition of the Elderly : Rural-Urban

(figures in parenthesis show percentages)

Health condition	Rural	Urban	Total
Good	111 (37.9)	53 (22.6)	**164 (31.1)**
Fair	21 (7.2)	91 (38.9)	**112 (21.1)**
Bad	161 (55.0)	90 (38.5)	**251 (47.6)**
Total	**293 (100.0)**	**234 (100.0)**	**527 (100.0)**

Source: Field survey data of the present study (2015-16)

Table-2.16 shows the perception of the elderly people regarding their health condition in selected district of our present study. Nearly half (47.6 percent) of the respondents in our sample study area perceived their health status as bad. Generally, health condition of a person deteriorates with the ageing process. One fifth of the elderly considered their health condition as fair while, 31 percent of them considered their health condition as good. **Table- 2.16** also shows that the proportion of elderly in the category of good health condition was comparatively higher in the rural area than the urban area.

Chronic Diseases

Out of the total sample size of 527 respondents in the present study, 370 (70.2 percent) elderly, irrespective of sex and place of residence, were found suffering from at least one chronic disease (**Table-2.17**).

Table -2.17

Elderly suffering from chronic diseases: Rural-Urban

(figures in parenthesis show percentages)

No of chronic diseases	Rural	Urban	Total
One	43 (21.9)	25 (14.9)	**68 (18.4)**
Two	120 (59.4)	99 (58.9)	**219 (59.2)**
Three & more	39 (19.3)	44 (26.2)	**83 (22.43)**
Grand Total	**202 (100.0)**	**168(100.0)**	**370 (100.0)**

Source: Field survey data of the present study (2015-16)

Again, out of 370 total, 18.4 percent reported suffering from one chronic disease while, 59.2 percent and 22.43 percent of respondents, reported suffering from two and three and more chronic diseases respectively. The proportion of elderly suffering from three or more chronic diseases was found to be larger in the urban area. Thus, the rural-urban breakup shows that the urban elderly compared to their rural counter parts, were more vulnerable to the chronic diseases.

Health Insurance

Table-2.18

Elderly under Coverage of Health Insurance

(figures in parenthesis show percentages)

Coverage of Health Insurance	Total
Yes	84 (15.9)
No	443 (84.1)
Total	**527 (100.0)**

Source: Field survey data of the present study (2015-16)

In our study, an attempt has been made to assess the coverage of health insurance amongst the elderly respondents. **Table-2.18** shows a very dismal picture of the coverage of the elderly respondents by Health Insurance.

Activities of Daily Living (ADL)

Independence in the case of ADL means an elderly can perform his or her daily activities without taking assistance from anybody. Independence of ADL does not always mean an elderly is free from any disease.

Table-2.19

ADL of the Respondents : Rural-Urban

(figures in parenthesis show percentages)

	Rural	**Urban**	**Total**
Independent	208 (71.0)	85 (36.3)	**293 (55.6)**
Dependent	85 (29.0)	149 (63.7)	**234 (44.4)**
Total	**293 (100)**	**234 (100)**	**527 (100)**
Source: Field survey data of the present study (2015-16)			

It is observed from the **Table-2.19** that out the total of 527 respondents of the present study, 293 (55.6 per cent) respondents were able to perform their daily chores without any help. A significant difference has been observed between rural and urban area. More than three fourth of the rural elderly (71 per cent) of the respondents were found to perform ADL without any assistance, while it is only 36.3 per cent in the urban area.

2.5 Conclusion

From the above socio-economic and demographic background profile of the respondents of the present study; it has been observed that the majority of the elderly belong to the nuclear family. So far living arrangement is concerned, majority of the elderly were found to be living with their spouse, with spouse and children and grand children, with children and grand children.

The percentage distribution of the elderly shows that majority of the respondents irrespective of sex was found to be in the age group of 60-69 years. Female elderly were found to be comparatively higher in all groups irrespective of place of residence. Total literacy rate amongst the elderly was found to be low and it was observed to be more pronounced in case of the female elderly. All most one third of the elderly respondents were found to be widow as against 7.4 per cent of widower. Regarding the types of work, majority of the respondents were found to be currently engaged in farming (41 per cent). Most of the elderly were observed to be living with their spouse and children and grand children. More than two fifth of the elderly in the present study were found to be economically independent

Another important observation from the study was that, 70.2 per cent elderly irrespective of sex and place of residence were found suffering from at least one chronic disease. It was also observed that 53.8 per cent of the respondents were independent of ADL. Another significant difference observed from the study was that ADL dependency was more amongst the urban elderly, compared to their rural counterparts. Social contact as one of the major factors determining the ADL dependency of the elderly was reported 37.8 per cent. It was found to be higher (47.8 per cent) in rural area compared to the urban area (25.3 per cent).

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Chapter-3
Living Arrangement of the Elderly

3.1 Introduction

Living arrangement refers to one's household structure and can be interpreted it in terms of the type of family in which the elderly live. The place they stay in and the people they stay with, the kind of relationship they maintain with their kiths and kin, and, on the whole the extent to which they adjust to the changing environment (Rajan, Misra and Sharma, 1995). Living arrangement is an important aspect in dealing with the welfare of the elderly persons. The elderly being the dependent need the care and support of others in their later life. The care and support of the elderly can be linked to their residence, that is, their living patterns or the living arrangement.

There are several living patters for the elderly such as living alone, living with spouse, living with children and grand children, living in old age homes, living with relatives and living with others.

Many studies have been done to investigate the determinants leading to a specific living arrangement. Living arrangements are influenced by a variety of factors including number and availability of children and other relatives, kinship patterns of the society, location of household, marital status, financial status, availability of services and physical and mental wellbeing of the elderly (Scaffer, 1999; Kan, Park and Chang, 2000). The researchers have also examined the effects of living arrangement on the physical and psychological wellbeing of the elderly. According to them, changes in living

arrangements, family structure and mode of retirement adversely affect the old (D'Souza, 1989). It is widely known that the erosion of the traditional norm whereby the elderly generally live with children or relatives reduces the wellbeing of the older population (Palloni, 2001). The overall wellbeing of the elderly consists of their physical, mental and social well-being. However, that it is not shown by the experience of industrialized nations where government fostered systems meet the economic and social needs of the elderly. A good proportion of elderly women live alone while their male counterparts live with the spouses, a phenomenon explained by the higher life expectancy among females. The emerging demographic trends, for example, increasing divorce rates, influence the living arrangements at old age greatly (Legare and Martel, 2003; Martel and Carriere,2003). In Asian countries support and care of the elderly come mostly from the family. Martel and Carriere (2003) also found that prevalence of widowhood and divorce rates have different impacts on the living arrangements of the elderly.

3.2 Living arrangement of the Elderly in India by States

The pattern of living arrangement of the elderly in India as per the NSS 60th round data, across the major states (**Table-3.1**), depicts that 5.2 per cent Indian elderly lived alone, of which less than one per cent lived in old home and the rest (4.73 per cent) lived alone but not in old home and 3.94 percent lived with others. In other living arrangement categories, elderly lived with spouse and others (45.58 per cent) and without spouse but with children (32.62 per cent) were found to be in higher in proportion. No significant difference was noticed in rural urban households, but differences are pronounced as between male and females in India (NSSO, 2004).

Table-3.1

Living Arrangement of the Elderly by some selected states, India

States	Living alone in the old home	Living alone but not in old home	Living with spouse only	Living with spouse and other members	Living without spouse but with children	Living with others
Andhra Pradesh	0.39	8.23	21.1	32.69	32.74	4.73
Assam	**0.06**	**2.67**	**3.72**	**55.53**	**36.63**	**1.24**
Bihar	1.3	2.7	11.99	52.32	30.14	1.08
Chhattisgarh	**3.43**	**5.44**	**11.69**	**35.59**	**38.54**	**3.72**
Gujrat	0.11	5.59	13.71	44.34	34.2	2.03
Haryana	0.04	1.02	7.33	58.41	30.62	1.85
Himachal Pradesh	0.25	3.73	10.41	42.37	37.53	5.11
Karnataka	0.06	5.27	9.3	45.59	34.72	4.93
Kerala	0	3.06	9.4	45.89	35.95	5.21
Madhya Pradesh	**1.5**	**4.07**	**14.47**	**44.34**	**30.09**	**5.23**
Maharastra	0.44	5.31	12.84	47.4	29.67	4.01
Odissa	0.25	3.16	12.27	51.09	30.63	2.15
Punjab	0.24	2.71	9.56	54.43	30.51	2.52
Rajastan	0.49	2.99	9.89	47.28	35.03	3.44
TamilNadu	0.13	10.78	18.91	36.68	26.92	6.09
Uttar Pradesh	0.54	3.64	10.24	46.61	34.04	4.19
West Bengal	0.14	3.4	8.03	45.77	36.73	4.96
India	**0.48**	**4.73**	**12.16**	**45.58**	**32.62**	**3.94**

Source: NSSO 60th Round, 2004

Amongst the major states, the percentage of elderly living alone was comparatively low but the state of Chhattish Garh and Madhya Pradesh being the exception showed 3.43 per cent and 1.5 per cent of elderly living in old home. On other hand, state of Tamil Nadu showed the highest percentage of elderly living alone but not in old home. However, in all the states in India, the proportion of elderly living with spouse and others was found to be highest followed by the proportion of elderly living without spouse but with others were higher in proportion. The same trend was also observed in the state of Assam.

The proportion of the elderly living lone but in old home was observed to be negligible. This indicates that across the states, the traditional family set up has not been changed.

3.2.1 Living arrangement of the elderly in Assam and India

NSSO 60th Round data regarding the living arrangement of the elderly in India as well as in the state of Assam gives us a clear picture about the living pattern of the elderly at the state and national level (**Table-3.2**).

Table-3.2

Living arrangement of the elderly in India & Assam

(figures in parenthesis show percentages)

	ASSAM	INDIA
Living alone	2.67	4.73
With spouse	3.72	12.16
With spouse and children and grand children	55.53	45.58
With children and grand children	36.63	32.62
others	1.24	3.94

Source: NSS data 60TH Round,2004

From the **Table-3.2,** it is clear that majority of the Indian elderly are living with spouse and children and grand children and without spouse children and grand children. In these categories, Assam has slightly more percentage of the elderly but so far the living alone category is concerned, it has less percentage (2.67) compared as against the national level (4.73 per cent). In overall, it can be analyzed that children are the highest form of security and the system is yet to break from the traditional familial bonds. Assam is also no exception to that.

3.3 Pattern of Living Arrangement of the Elderly Respondents in the Undivided Kamrup District of Assam.

The elderly irrespective of the place of residence, at both state and national level, is mostly found living with their children and grand children. In the present study, an attempt has been made to explore the living patterns of the elderly respondents under the following aspects.

3.3.1 Living Arrangement of the Elderly Respondents: Rural-Urban

Table - 3.3 shows the living patterns of the elderly of the present study by place of residence. A significant observation from **Table-3.2** is that nearly half of the elderly (48.4 per cent) with spouse or without spouse, was found to live with their children or grand children while, one fourth (25.4 percent) of the elderly was found to live with their spouse only. It is worth to be mentioned that the proportion of the elderly living with relatives (16.1 per cent) and non-relatives (4.4 per cent), though, found to be in small proportions, yet constituted a considerable proportion (21.5 per cent) while clubbed together. Only 5.7 percent of the elderly was found to live alone.

Table-3.3

Distribution of Elderly by living arrangements :Rural-Urban

(figures in parenthesis show percentages)

	Rural	Urban	Total
Living alone	25 (8.5)	05 (2.1)	**30 (5.7)**
With spouse	85 (29.0)	49 (20.9)	**134 (25.4)**
With spouse and children and grand children	93 (31.7)	56 (23.9)	**149 (28.3)**
With children and grand children	33 (11.5)	73 (31.2)	**106 (20.1)**
With relatives	55 (18.8)	30 (12.8)	**85 (16.1)**
With non-relatives	02 (0.6)	21 (9.0)	**23 (4.4)**
Total (N)	**293 (100.0)**	**234 (100.0)**	**527 (100.0)**

Source: Sample survey data (2015-16)

The rural urban break-up **(Table-3.3)** of the percentage distribution of the elderly by living arrangement ,shows that more than half of the urban elderly (55.1 percent) as against their rural counterparts (43.2 per cent), either with spouse or without spouse, was found to be living with their children and grand children. On the contrary, the elderly respondents in the urban area, living with relatives (12.8 percent) and non-relatives (9.0 percent) when clubbed together constituted a considerable proportion i.e., more than one fourth of the total respondents.

3.3.2 Elderly Living with their Children: Rural-Urban

Table-3.4

Elderly Living with Children : Rural-Urban

(figures in parenthesis show percentages)

	Rural	Urban	Total
Living with children and grand children	126 (43.0)	129 (55.1)	255 (48.4)
Not living with children and grand children	167 (57.0)	105 (44.9)	272 (51.6)
Total (N)	**293 (100.0)**	**234 (100.0)**	**527 (100.0)**
Source: Field survey data of the present study (2015-16)			

The rural–urban differential (**Table-3.4**) of living patterns of the elderly can also be viewed as living with children or grand children and without children. It was observed that elderly either with spouse or without spouse living with children or grand children was found to be higher (55.1 percent) compared to the proportion of the elderly not living with their children (44.9 percent) in the urban area.

On the contrary, proportion of elderly living with children or grand children was comparatively less (43.0 percent) than the proportion of elderly not living with their children or grand children (57.0 percent).

3.3.3 Reasons for not living with Children: Rural-Urban

The respondents (not living with their children) were also asked about the reasons for not staying with children in the present study.

Table-3.5

Reason for not living with children : Rural-Urban

(parenthesis shows percentages)

	Rural	Urban	Total
No Children	7 (4.2)	22 (21.0)	**29 (10.7)**
Reluctance of the children to live with their parents	59 (35.3)	33 (31.4)	**92 (33.8)**
Children are away from home	68 (40.7)	35 (33.3)	**103 (37.9)**
Elderly do not intend to leave own place	33(19.3)	15 (14.3)	**48 (17.6)**
Total	**167 (100.0)**	**105 (100.0)**	**272 (100.0)**
*Chi-square value= 15.804: df = 2 , significant at 1%***			
Source: Field survey data of the present study (2015-16)			

The responses in this regard were categorized into four categories - no children, children are reluctant to live with their parents, children are away from home and elderly do not intend to leave their native own place. The rural-urban (**Table-3.5**) break up shows that in the rural area, 35.3 per cent of elderly, as against 31.4 per cent in the urban area, reported children were reluctant to live with their parents. This may be due to the fact that the cost for an alternative living arrangement in the urban area is more expensive than that of in the rural area. A higher proportion of the elderly not living with children reported children were away from home. In the rural area, it was 40.7 per cent while, it was 33.3 per cent in the urban area. In the field study area, more children of the respondents were found to migrate from the rural area to the urban area for two main

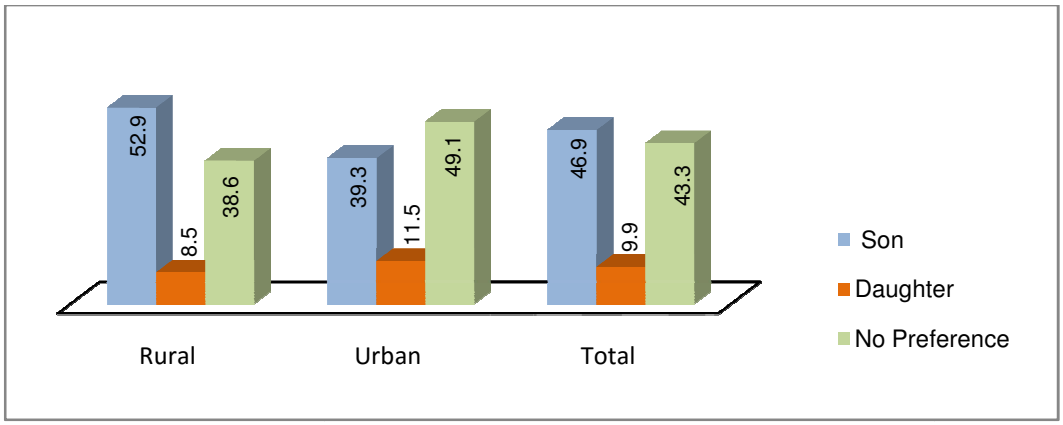
reasons, either for engagement of work or in search of employment opportunity. Indian traditional family arrangement i.e., living with extended family (non-nuclear) was observed to be marginal (5.7 per cent-shown in **chapter-2, Table-2.10**) compared to the nuclear family living arrangement (94.3 per cent, in **chapter-2, Table-2.10**) in the present study. This may be interpreted as one of the reasons for the reluctance on part of the children to live with the elderly parents.

The fourth category of the reason for not living with children, that is, the elderly respondents not intending to leave their own place, is an important aspect of the living arrangement of the elderly. In our present study, overall 24.6 per cent respondents were found to be not interested to leave their own place. It was 28.1 per cent and 20 per cent in the rural and urban areas respectively. The flexibility amongst the urban elderly respondents to adjust with the alternative or new living arrangement was observed to be comparatively higher than their rural counterparts.

3.3.4 Preference of the Elderly to live with Children by Sex

Respondents were also asked during our field survey to reveal their preference whether they would like to live with their sons and daughters. For this, three categories were made - son, daughter and cannot say. **Fig: 2,** shows the preference for living arrangement of the respondents of the present study. Out of the total of 527 respondents 46.9 per cent of the elderly were found to prefer to live with their sons while 9.9 per cent of the respondents showed their preference for daughters to live with. It is quite unusual to the Indian social custom to stay in the house of the daughter after her marriage.

Fig: 2 Preference for living Arrangements: Rural-Urban



Source: Field survey data of the present study (2015-16)

A significant observation in this regard is that, 43.3 per cent of the respondents were found to be in the no preference category. It is also evident from the above **Fig-2,** that in the urban area, preference for daughter is found to be more in comparison to the rural area because unlike the rural society, in an urban society the bindings of the traditional values and customs are not that much strong.

3.3.5 Decisions Regarding Current Living Arrangements: Rural-Urban

Table-3.6

Decision regarding current living arrangement: Rural-Urban

(figures in parenthesis show percentages)

	Rural	Urban	Total
Voluntary	153 (52.2)	98 (41.9)	251 (47.6)
Compulsion	140 (47.8)	136 (58.1)	276 (52.4)
	293 (100.0)	234 (100.0)	527(100.0)
Chi-square=52.286 df=1; significant at 1%			

Source: Field survey data of the present study (2015-16)

The decision regarding the current living arrangement status (**Table-3.6**) shows that in more than half of the cases decisions were taken under compulsion. In this context,

urban elderly were found to have less freedom of choice as compared to their rural counter parts. The reason may be that in urban area, a new living arrangement might not be easily possible due to the high cost of accommodation. Another possible reason may be that in urban nuclear family where both the spouses are engaged in gainful employment, elderly parents often become care givers for their young children.

3.4 Socio- Economic background of the Elderly living with Children and not living with children.

Table-3.7

Percentage of Elderly living with and not living with their children by some selected variables

(figures in parenthesis show percentages)

	Living with Children (N=255)	Not Living with Children (N=272)	Total (N=527)
Age			
60-69	176 (57.0)	133 (43.0)	**309 (100.0)**
70-79	65 (40.8)	87 (59.2)	**152 (100.0)**
80	14 (21.2)	52 (78.8)	**66 (100.0)**
Chi-square: 37.103 df=2 significant at 1%			
Education			
Illiterate	58 (47.9)	63 (52.1)	**121 (100.0)**
Educated Up to primary level	35 (37.6)	58 (62.3)	**93 (100.0)**
Educated Up to middle level	20 (69.0)	9 (31.0)	**29 (100.0)**
Educated up to HSLC	55 (50.0)	55 (50.0)	**110 (100.0)**
Passed HSLC/HS	18 (20.0)	72 (80.0)	**90 (100.0)**
Passed Graduate and above	69 (82.1)	15 (17.9)	**84 (100.0)**
Chi-square: 1.042 df=5 significant at 1%			
Economic dependency			
Independent	126 (51.6)	118 (48.4)	**244 (100)**
Dependent	129 (46.6)	154 (54.4)	**283 (100)**
Chi-square: 4.977 df=1 significant at 5%			
Place			
Rural	126 (43.0)	167 (57.0)	**293 (100.0)**
Urban	129 (55.1)	105 (44.9)	**234 (100.0)**
Chi-square: 3.213 df=1 significant at 10%			

Source: Sample survey data (2015-16)

The status of Living arrangement of the elderly can be better understood with some selected socio- economic background variables, such as age, Education, economic dependency, place of residence and sex (**Table –3.7).**

Majority of the respondents (57 per cent) in the 60-69 years of age group, were found to live with their children (**Table-3.7).** The proportion of the respondents living with their children was observed to decrease with the increase of their age. A reverse trend has also been observed amongst the elderly respondents in the category of not living with their children. As age progresses, elderly parents need more and more support and care from their children. In such cases, children may consider the elderly parents as their burden. Thus, in the present study, in most of the cases children were found to be living with the young old parents (60-69 years) while, the cases like children living with the old old parents(80 years and above) were found to be less.

Another important determinant of the living arrangement is economic independency of the elderly. Economically independent elderly living currently with their children were found to be 51.6 per cent and 48.4 per cent respectively. The higher percentage may be due to the fact that economically independent elderly parents (living with children) do not only take support from their children but also extend support to their children. Contrary to that, economically independent elderly parents (not currently living with children) might have their personal choice to live independently. Again, it has been observed from our field study that in some cases, children of the economically independent elderly were found to migrate from their own place to other place for better future prospect.

It has also been observed from **Table-3.7** that fully dependent elderly (currently living with children) were found to be 46.6 per cent while in the same category, 54.4 per cent respondents were not living with their children. The percentages of the dependent elderly who were currently not living with their children were more in proportion compared to the respondents currently living in the same category.

Rural-urban disparity is always helpful to understand the socio-economic problems of the respondents. In our present study, elderly respondents living with their children in urban areas (55.1 per cent) were found to be more in comparison to the rural areas (43.0 per cent). Respondents not living with their children were recorded more in the rural areas (57.0 per cent) than the urban areas. Higher accommodation cost in the urban areas may be considered as the reason for the higher proportion of elderly living with the children and grand children.

Education has not shown any significant influence in determining the living arrangement of the respondents in the present study.

3.5 Conclusion

The elderly need the care and support of others in their later life but it was not always forthcoming. Higher aspiration of life, growing consumerism, and rapid urbanisation have resulted in inter generation conflicts and increased vulnerability of the old age. It was observed in the present study that in most of the cases, children preferred to live with their elderly parents as long as they were supportive and care givers for their children. Economic independency is also an important determinant of current living arrangement status of the elderly. Economic self sufficiency not only ensures welfare of

the elderly but also ensures economic support to their children. In a society like India, familial support is still prevalent and children are observed to be the main source of care and support to the elderly parents. But, living with children does not always ensure the elderly the care and support from their children.

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Chapter- 4
Work Participation of the Elderly

4.1 Introduction

Old age is generally considered the time to relax for the rest of the life. Inadequate financial resource of the elderly people is a problem for them to continue their life. In absence of economic independency, the elderly are forced to work to earn bread and butter not only for themselves but also for their families. Inadequate social security for the elderly in India leads to financial distress which forces them to participate in the work force. The high level of work participation of the poor elderly indicates that they have only one retirement, that is, not from the work but from the world (Rajan, Mishra and Sharma,1999). Emergence of nuclear family in Indian society is also considered as one of the reasons for the work participation of the elderly. Another major problem of the elderly is that, though they continue to work, their working hours decrease with increasing age. The major sources of worry for the elderly are stress and economic dependency. The issue of increasing the participation of aged in the labour market, however, has not received its due attentions as government use retirement as an instrument to provide more employment opportunities to the young.(Salem,2008). In this context, analysis of work force participation (WFP) rate among the elderly is important from the

point of view of understanding meeting their own and their family's economic needs. (Rajan, 2003).

The total number of elderly workers in India was approximately 7 per cent of the total workforce (Selvaraj, 2011). This estimate was based on NSSO data from 1983 to 2004-05. WFP rate for the elderly decreased from 42 per cent in to 39 per cent in 2004-05. The reason for this is mainly the growth of elderly in the higher age group who are less likely to participate in the workforce. Sing and Das(2012) have analyzed the determinants of old age wage labour participation and supply in India from 1993-94 to 2009-10 on the basis of the current weekly status data generated by the NSSO. This analysis shows that the wage labour participation of the elderly for the period 1993-94 to 2009-10, has decreased in urban areas (from 7.45 per cent to 6.01 per cent) but increased in rural areas (from 9.66 per cent to 11.35 per cent). More male elderly are found to be in the total elderly workforce. The lower participation of elderly females in the work force India can be viewed from the point, that, household activities have not been taken into account in the workforce participation .Another reason for low rate of work participation of the elderly is that, sexual division of work in families, where women are expected to stay back to look after the domestic work at home and in specific cases, elderly females are also expected to take on the responsibility of looking after the young grand children.

4.1.2 Work Participation of the Elderly in India

Table-4.1

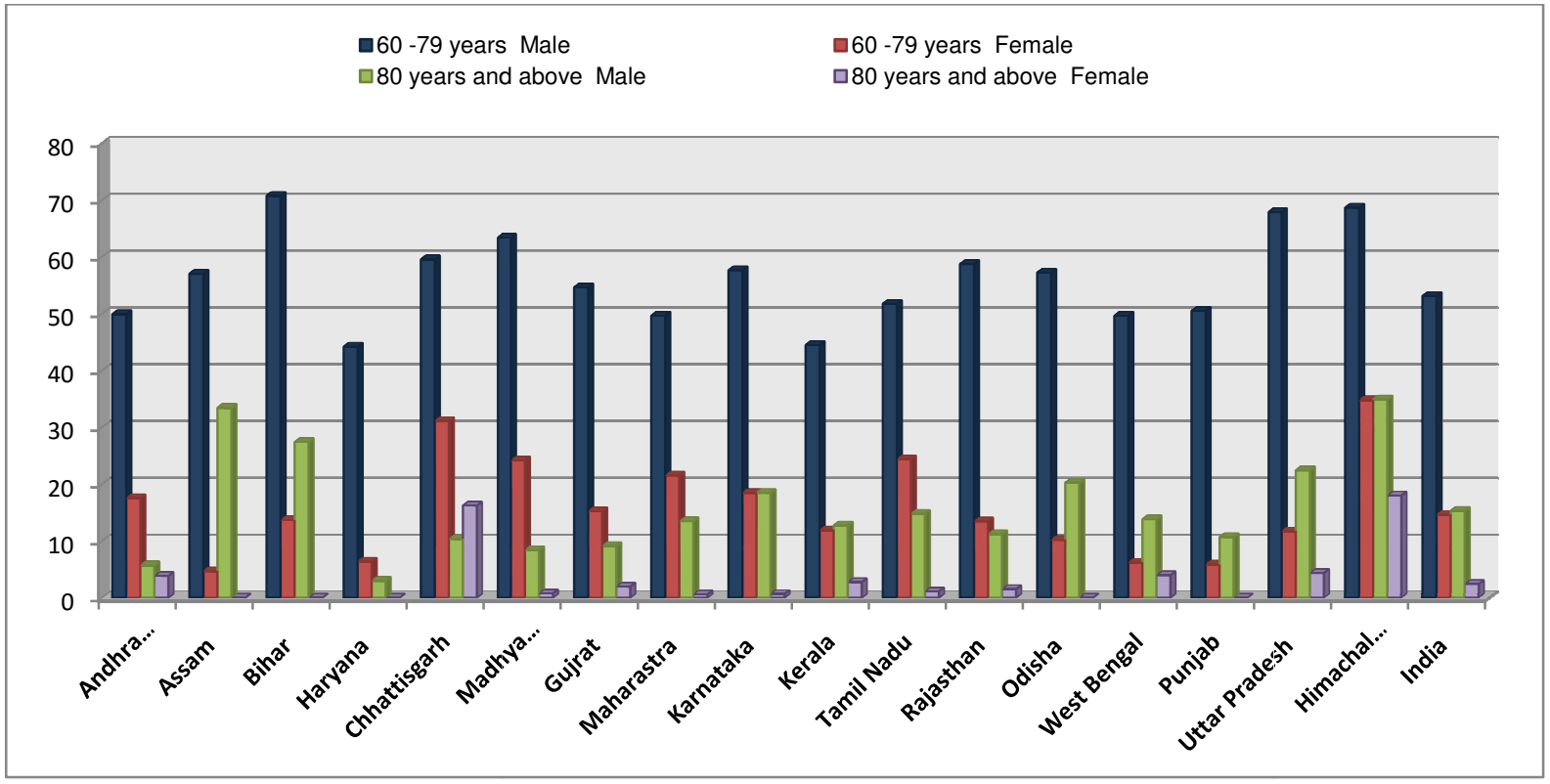
Work participation rates of the elderly in India : Sex & Place of Residence
(figures in parenthesis show percentages)

Years		India		
		Total	**Male**	**Female**
1991	Total	37.18	56.98	15.53
	Rural	41.22	61.89	18.38
	Urban	23.33	39.75	5.96
2001	Total	40.87	60.51	21.64
	Rural	25.80	65.85	25.80
	Urban	26.75	44.60	9.38

Source: Census of India, 1991 and 2001.

The work participation of the elderly in India has been observed to increase from 37.18 in 1991 to 40.87 in 2001 (**Table-4.1**). Rural-urban comparison of the growth rate of the work participation of the elderly during 1991-2001 shows a higher rate in the urban area. Significant increase in the work participation of both male and female elderly irrespective of place residence has also been observed. The growth rate in the work participation of female elderly (7.42 per cent) during the period, 1991-2001 was higher than that of the male elderly (3.96 per cent) in the rural area. On the contrary, the growth rate in the work participation of male elderly (4.85 per cent) between 1991 and 2001 was higher compared to the female elderly (3.42 per cent) in the urban area. But the gap between the male and female work participation rate was found to decrease from 41.45 percent in 1991 to 38.87 per cent in 2001. This might be due to the increasing work participation amongst the females.

Fig: 3 Percentage of gainful employment of the elderly aged 60 years and above by selected major states in India



Source: NSSO, 61st Round

The percentage distribution of the work participation of the elderly in the age group of 80 years and above in 2004-05 was found to be less than the age group of 60–79 years across the states of India and at the national level (**Fig-3).** A significant gender gap in work participation of the elderly was found in all the states as well as at the national level. Work participation rate of the male elderly in the age group 60-79 years was found to be highest (70.74 per cent) in Bihar followed by Himachal Pradesh and Uttar Pradesh. The work participation amongst the male elderly aged 60-79 years in Assam was 57.01 percent. In case of female's work participation in the same age group, the state of Himachal Pradesh stood first in the table and Chhattish Garh placed second. The work participation of the male elderly in the age group 80 years and above across the states was found to be in an average 20 per cent. However, Himachal Pradesh and Assam being the exception to this, recorded the participation rate 34.93 per cent and 33.41 percent respectively.

4.2 Work Participation of the Elderly in Undivided Kamrup District

An attempt has been made in this chapter to highlight different issues in relation to work participation of the elderly in our present study area.

Table- 4.2 shows the distribution of the gainful employment of the respondents of the present study. Out of 527 elderly respondents, 190 elderly persons (36.1 per cent) were found to be engaged in economic activities while, 337 elderly persons (63.9 per cent), were found not engaged in any gainful economic activity.

Table-4.2

Elderly with gainful employment by residence

(figures in parenthesis show percentages)

Response	Rural	Urban	Total
Yes	120 (41.0)	70 (29.9)	**190 (36.1)**
No	173 (59.0)	164 (70.1)	**337 (63.9)**
Total	**293(100)**	**234(100)**	**527 (100)**
Chi-square :6.879 df=1 significant at 1%			

Source: Field survey data (2015-16)

So far as the rural-urban difference is concerned, out of the total of 293 rural samples of the present study, 120 respondents (41.0 per cent) were engaged in gainful economic activities and the same was found to be 29.9 per cent in urban area. More than 70 per cent of the elderly in urban area were found to be not engaged in any gainful employment. Gainful employment of the elderly was more pronounced in rural area in comparison to that of urban area. This might be due to large scale poverty in the rural area. It was also observed during our field survey, that, the elderly were mostly engaged in the agricultural activities. There is no retirement age bar for the poverty ridden elderly, irrespective of the place of residence. The rural elderly respondents of the present study, with insufficient social security net, care and support from the government and the society, have to work in the agricultural fields till their health permits.

4.2.1 Work participation of the elderly: Voluntary & Under Compulsion

To understand the work participation of the elderly in a better way, we categorized gainful economic activities into two categories- voluntary employment and employment under compulsion. By voluntary we mean the persons who work at their own will only. So far as their work participation is concerned, it is not under stress and compulsion. But the persons who work beyond the retirement age under compulsion, means, they

lack options in their hands. They must work to earn their own livelihood by themselves as well as to support their families. They work till their health permits. The following Table-4.3 shows the distribution of the voluntary participation as well as under compulsion in the work force of the present study.

Table-4.3

Elderly with gainful employment (Voluntary & Under Compulsion):Rural-Urban

(figures in parenthesis show percentages)

	Rural	**Urban**	**Total**
Voluntary	08 (6.7)	44 (62.9)	**52 (27.4)**
Under Compulsion	112 (93.3)	26 (37.1)	**138 (72.6)**
Total	**120 (100)**	**70 (100)**	**190 (100)**
Chi-square : 0 .863; df=1; significant at 1%			

Source: Field survey data, (2015-16)

Out of the total labour force of the respondents **(**190) of the present study, 27.4 per cent elderly respondents were found to be engaged voluntarily while, others were engaged under compulsion (72.6 per cent) in the gainful economic activities. A significant observation was that, a higher proportion of the elderly were found to be engaged in economic activities under compulsion. It implies a stressful life of the elderly. Similarly, rural –urban beak up showed that majority of the elderly was engaged under compulsion in rural areas (93.3 per cent) while, elderly respondents were found to be more (62.9 per cent) in the category of voluntary employment, in urban area.

4.2.2 Work Participation of the Elderly under Voluntary and Compulsion by Types of Work: Rural-Urban

It is observed in the present study that out of a total of 138 elderly respondents working under compulsion, more than half of them were engaged in farming followed by 17.4 per cent and 16.7 per cent were engaged as daily wage earner and an employee

respectively (**Table**-4.4). In the rural area, nearly three forth of the elderly was found engaged in farming while, in the urban area, a larger proportion of the elderly respondents were found as daily wage earner (36.1 per cent) and employee (41.7 per cent) under compulsion.

Table- 4.4

Work Participation of the Elderly under Voluntary and Compulsion by Types of Work: Rural-Urban

(figures in Parenthesis show percentages)

	Total work participation			Voluntary work participation			Work participation under compulsion		
	Total	**Rural**	**Urban**	**Total**	**Rural**	**Urban**	**Total**	**Rural**	**Urban**
Farming	84 (44.2)	84 (73.0)	--	9 (17.3)	9 (69.2)	--	75 (54.3)	75 (73.5)	--
Self employed	49 (25.8)	11 (9.6)	38 (50.7)	33 (63.5)	3 (23.1)	30 (76.9)	16 (11.6)	8 (7.8)	8 (22.2)
Daily wage earner	24 (12.3)	11 (9.6)	13 (17.3)	--	--	--	24 (17.4)	11 (10.8)	13 (36.1)
Employee	33 (17.4)	9 (7.8)	24 (32.0)	10 (19.2)	1 (7.7)	9 (23.1)	23 (16.7)	8 (7.8)	15 (41.7)
Total	**190**	**115**	**75**	**52**	**13**	**39**	**138**	**102**	**36**

Source: Field survey data, (2015-16)

It is observed in the present study that out of a total of 138 elderly respondents working under compulsion, more than half of them were engaged in farming followed by 17.4 per cent and 16.7 per cent were engaged as daily wage earner and an employee respectively. In the rural area, nearly three forth of the elderly was found engaged in farming while, in the urban area, a larger proportion of the elderly respondents were found to be engaged as daily wage earner (36.1 per cent) and employee (41.7 per cent) under compulsion.

Regarding the voluntary work participation of the elderly respondents, it was observed that majority of the elderly respondents (63.5 per cent out of 52 elderly) were engaged as self employed and it was found to be higher in the urban areas (76.9 per cent).

4.2.3 Work Participation of the Elderly Respondents Voluntary and Under Compulsion by Broad Age Group: Rural-Urban

It is also important to discuss the work participation of the elderly by their age groups. It is understood that the ability to work and the age of the elderly was negatively associated. We know that, higher age of the elderly implies a lower capability to work. The **Table-4.5** depicts the distribution of the respondents with gainful employment (Voluntary & under compulsion) by broad age groups.

Out of the total of 190 elderly gainfully employed, 160 respondents in the age group of 60-69 years that is 84.2 per cent was found to be engaged in gainful

Table-4.5

Elderly with gainful employment (Voluntary & Compulsion) by broad age group.

(figures in parenthesis show percentages)

Age groups	Voluntary	Under Compulsion	Total
60-69 years	31 (59.6)	129 (93.5)	**160 (84.2)**
70-79 years	16 (30.8)	09 (6.5)	**25 (13.2)**
80 years & above	05 (9.6)	0 (00)	**05 (2.6)**
Total	**52 (100)**	**138 (100)**	**190 (100)**
Chi-square:23.463; df=2; significant at 1%			

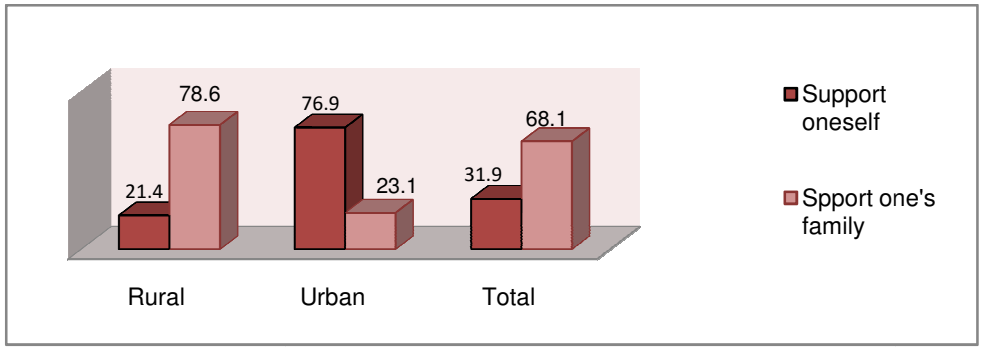
Source: Field survey data (2015-16)

economic activities, followed by 13.2 per cent and 2.6 per cent in the age category of 70-79 years and 80 years and above respectively. Majority of the respondents (93.5 per cent) in the age group 60-69 years was engaged in gainful employment under compulsion. Again, in the same age category, 59.6 per cent elderly were found to be voluntarily employed. A significant observation was that, in the higher age group as expected, more percentages of the elderly were found to be engaged voluntarily in the gain full employment compared to under compulsion.

4.2.4 Reasons for Work Participation of the Elderly under Compulsion: Rural-Urban

Respondents were asked to state the reasons for their participation in economic activities under compulsion; the responses have been shown in (**Fig-4).** Of the total of 138 respondents engaged in work under compulsion, 31.9 per reported that they were in need to support themselves while, 68.1 per cent respondents replied that they were in need to support their family. Majority of the rural elderly (78.6 per cent) were found to be working to support their family while, contrast to this, majority of the urban elderly (76.9 per cent) reported that they were in need to work to support themselves.

Fig: 4 Reasons for Participation of Work of the Elderly under Compulsion: Rural-Urban



Source: Field survey data (2015-16)

A striking significant finding is that, majority of the elderly were found to be engaged themselves in economic activities under compulsion only to support their family.

4.2.5 Main worker and Marginal worker of Elderly Respondents

As per the census of India “Main workers” are referred to the workers who work major part of the year. Major part of the year refers to a period of work which is more than six months (183 days) and the persons who work less than that is referred as marginal workers (<183 days) .This has been depicted in the following **Table- 4.6.**

Table- 4.6

Percentage distribution of Main & Marginal Elderly workers: Rural-Urban

(Figures in parenthesis show percentages)

Types of worker	Rural	Urban	Total
Main	90 (75.0)	46 (65.7)	**136 (71.6)**
Marginal	30 (25.0)	24 (34.3)	**51 (28.4)**
Total	**120 (100)**	**70 (100)**	**190 (100)**

Source: Field survey data, (2015-16)

Out of 190 active elderly workers of the present study, 63.1 per cent belong to rural area while, 36.8 per cent were residents in urban area. It is revealed from the **Table-4.6** is that, majority of the elderly respondents (71.6 per cent) were found to be main workers while, 28.4 per cent reported as marginal workers. Another observation is that, main elderly workers were reported to be more in numbers both the areas compared to the marginal elderly workers. It is revealed from the statistics of the present study **(Table-4.2)** that most of them reported that they were in need to work under compulsion either to support themselves or to support their families.

4.2.6 Percentage distribution of Main & Marginal Elderly worker: Sex

Percentage distribution of Main & Marginal elderly worker by sex has been shown in the **Table-4.7,** out of the total of 190 elderly workers 79.5 per cent were male workers while, 20.5 per cent constituted female workers in our present study.

Table-4.7

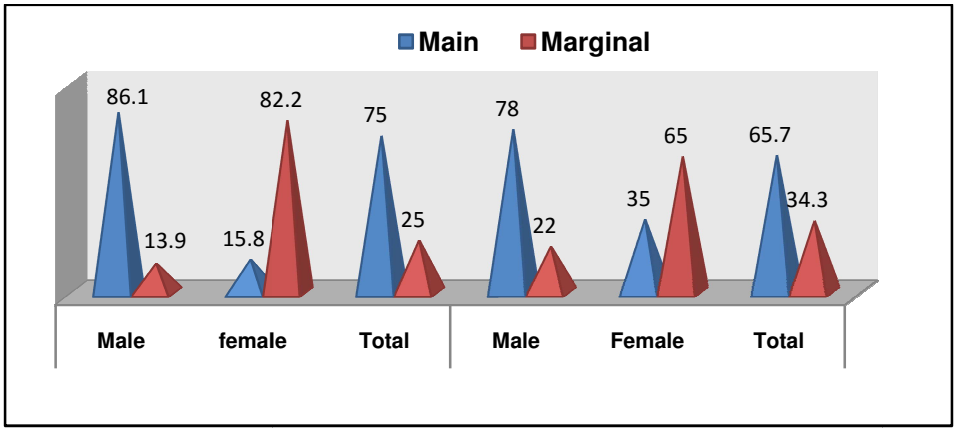
Percentage distribution of Main & Marginal elderly worker: Sex

(figures in parenthesis show percentages)

Types of worker	Male	Female	Total
Main	126 (83.4)	10 (25.6)	**136 (73.2)**
Marginal	25 (16.6)	29 (74.4)	**54 (26.8)**
Total	**151 (100)**	**39 (100)**	**190 (100)**
Source: Field survey data, (2015-16)			

As expected male main workers outnumbered main female workers, while in the sphere of marginal workers female worker were found to predominate.

Fig- 5 Percentage distributions of Main & Marginal workers amongst Elderly by Sex & Place of residence



Source: Field survey data, (2015-16)

The rural–urban break up of main and marginal elderly worker by sex shows that the proportion of the rural male main workers was more compared to their urban counterparts (**Fig-5**). Similarly, female marginal elderly workers were found to be more in the rural area, compared to that in the urban area. The same trend was also observed in the intra area analysis in regards to the main and marginal elderly workers with respect to sex.

4.3 Gainful Employment of the Elderly Respondents with Some Selected Socio-Economic Back Ground Variables

Table-4.8

Percentages of elderly by some selected socio-economic variables: Working & Not working

(figures in parenthesis show percentages)

Broad age category	**Working**	**Not working**	**Total**
60-69 years	160 (51.8)	149 (48.2)	**309 (100.0)**
70-79 years	25 (16.4)	127 (83.6)	**152 (100.0)**
80years & above	5 (7.6)	61 (92.4)	**66 (100.0)**
Chi-square:81.708; df=2; significant at 1%			
Educational level			
Illiterate	44 (36.4)	77 (63.6)	**121 (100.0)**
Educated Up to primary level	30 (32.3)	63 (67.7)	**93 (100.0)**
Educated Up to middle level	09 (31.0)	20 (69.0)	**29 (100.0)**
Educated up to HSLC	44(40.0)	66 (60.0)	**110 (100.0)**
Passed HSLC/HS	42 (46.7)	48 (53.3)	**90 (100.0)**
Passed Graduation & above	21 (25.0)	63 (75.0)	**84 (100.0)**
Chi-square : 32.804 , df=5 significant at 1%			
Sex			
Male	151 (65.4)	80 (34.6)	**231 (100.0)**
Female	39 (13.2)	257 (86.8)	**296 (100.0)**
Chi-square : 533 df=1 , significant at 1%			
Place of Residence			
Rural	120(40.4)	173 (59.6)	**293 (100.0)**
Urban	70 (29.9)	164 (70.1)	**234 (100.0)**
Chi-square: 6.879 df=1 , significant at 1%			
Economic independency			
Yes	61 (25.0)	183 (75.0)	**244 (100.0)**
No	129 (46.0)	154 (54.0)	**283 (100.0)**
Chi-square: 55.729 df=1 , significant at 1%			
Health condition			
Good	68 (41.1)	97 (58.5)	**164 (100.0)**
Fair / Bad	122 (33.6)	241 (66.4)	**363 (100.0)**
Chi-square:3.743 df=1, significant at 1%			

Source: Field survey data (2015-16)

Gainful economic activities of the elderly can be better understood with some of the selected socio- economic background variables of the respondents, such as age, education, economic dependency, place of residence and sex. It is shown in the **Table –4.8**.

In the age group of 60-69 years of the present study, 160 elderly was found to be "working" category while, 149 elderly respondents were in "not working" category. More than half of the population in this group was found "working" beyond their retirement age. It is natural that the ability to work in this category of elderly is always more compared to the other age categories. As age of the elderly progresses, the ability to work gets minimized. This is clearly pronounced in **Table-4.8.**

So far as the educational level is concerned, it is observed that majority of the respondents at all levels of education, were found "not working". Almost equal proportion of the elderly (i.e., more than 40 per cent) was observed engaged in gainful employment in the categories of Illiterate, educated up to HSLC and passed HSLC/HS of the present study. Thus, **Table-4.8** shows no significant association between education and work participation of the elderly.

Male–Female break-up analysis shows that out of 231 male respondents of the present study, 65.4 percent were found "working" while, 34.6 per cent was observed to be in "not working" category . In against of that, out of the 296 female elderly, 86.8 per cent was recorded not working while, 13.2 per cent females were found "working". In "working" category, majority of the males were found to be engaged. **(Table- 4.8).**

Similarly, one fourth (25 per cent) of the economically independent elderly were found in the working category while, 46 per cent of the elderly with economic dependency were observed to be engaged in the gainful work. Large scale of poverty and economic insecurity amongst the economically dependent elderly force them to participate in the work force even at their old age (60 years and above).

On the other hand, health condition of the elderly as perceived by them has also been observed to have a significant relationship with the status of work participation of the elderly. Around two fifth of the elderly respondents reported having good health were engaged in gainful employment while, nearly one third of the elderly reported health to be fair or bad were engaged in gainful employment.

4.3.1 Rural- Urban Differential of the Elderly Engaged in Gainful Employment by Some Selected Socio-Economic Back Ground Variables

Table-4.9 shows the selected socio-economic variables by place of residence amongst the respondents who were engaged themselves in gainful employment of the present study.

It was observed that majority of the respondents (84.2 per cent) who engaged themselves in gainful employment were found to be in the age group of 60-69 years in the present study. It is evident from the above table, that in the higher age groups, less numbers of respondents were engaged in gainful economic activities. In rural-urban break-up, 67.5 per cent elderly were found to be engaged themselves in the rural area in the same age group. It was also evident that no significant difference was observed in the age group of 70-79 years.

Table-4.9

Elderly engaged in gainful employment by some selected Socio- Economic variables: Rural-Urban

(figures in parenthesis show percentages)

Background variables	Rural	Urban	Total (N=190)
Broad Age category			
60-69 years	108 (67.5)	52 (32.5)	**160 (100)**
70-79 years	12 (48.0)	13 (52.0)	**25 (100)**
80 years & above	--	5	**05 (100)**
Educational level			
Illiterate	44	----	**44 (100)**
Educated Up to primary level	23 (76.7)	07 (23.3)	**30 (100)**
Educated Up to middle level	--	09 (100)	**09 (100)**
Educated up to HSLC	38 (86.4)	06 (13.6)	**44 (100)**
Passed HSLC/HS	15 (35.7)	27 (64.3)	**42 (100)**
Passed Graduate and above	--	21	**21 (100)**
Sex			
Male	101 (66.90	50 (33.1)	**151 (100)**
Female	19 (48.7)	20 (51.3)	**39 (100)**
Economically Independent			
Yes	21 (34.4)	40 (65.6)	**61 (100)**
No	99 (76.7)	49(23.3)	**129 (100)**
Health condition			
Good	43 (63.2)	25 (37.8)	**68 (100)**
Fair / Bad	77 (63.1)	45 (36.9)	**122 (100)**

Source :Field survey data (2015-16)

So far as the education level of the respondents who were engaged in gainful economic activities is concerned, out of the total of 190 respondents, 44 elderly were illiterate, 30 numbers educated up to primary level, 9 attained education up to middle level and 42 elderly attained education up to HSLC, 42 elderly passed HSLC/HS, and 21 elderly were found to have the qualification up to graduation and above. More illiterate respondents were found amongst the economically active elderly in the rural area (**Table-4.9).**

In gainful economic activities of the present study, majority of the respondents were found to be males (79.5 per cent) while, 20.5 per cent were females. A significant

difference noticed in the above **Table-4.9**, is that urban females were found to be in more proportions in comparison to the rural females in respect of gainful economic activities.

Since, possibility of voluntary engagement in gainful employment and engagement in trade and commerce were more in the urban area, a majority of the urban respondents with economic independency were found engaged in gainful economic activities (65.6 per cent).

Contrary to this, 76.7 per cent of the respondents in the category of economically dependent but engaged in gainful economic activities were from the rural area and most of them were found to be engaged in informal sector.

Another significant observation is that the proportions of elderly working with good as well as fair/bad conditions of health were found comparatively higher (63per cent) in the rural area than the urban areas.

4.3.2 Rural- Urban Differentials of the Elderly Respondents Not Engaged in Gainful employment with some selected Socio-Economic variables

To assess the status of the elderly who were not engaged in the gainful employment, an analysis of their background variables is felt to be essential.

Table-4.10 shows that in the broad age category, out of the total of 337 respondents (not engaged in gainful employment), 149 respondents, 127 respondents and 61 respondents were found to be in the age categories of 60-69 years, 70-79 years and 80 years and above, respectively. It is observed that no significant difference has been found regarding the rural-urban distribution of the respondents.

Table-4.10

Elderly not engaged in gainful employment by some selected socio-economic variables: Rural-Urban

(figures in parenthesis show percentages)

Background variables	Rural	Urban	Total (N=337)
Broad age category			
60-69 years	82 (55.0)	67 (45.0)	**149 (100.0)**
70-79 years	63 (49.6)	64 (50.4	**127 (100.0)**
80years & above	28 (45.9)	33 (54.1)	**61 (100.0)**
Educational level			
Illiterate	77 (100.0)	--	**77 (100.0)**
Educated Up to primary level	52 (82.5)	11 (17.5)	**63 (100.0)**
Educated Up to middle level	20 (100.0)	--	**20(100.0)**
Educated up to HSLC	24 (42.1)	33 (57.9)	**57 (100.0)**
Passed HSLC/HS	--	48 (100.0)	**48 (100.0)**
Passed Graduation & above	--	63 (100.0)	**63 (100.0)**
Sex			
Male	20 (25.0)	60 (75.0)	**80 (100.0)**
Female	153 (59.5)	104 (40.5)	**257 (100.0)**
Economically independent			
Yes	152 (62.3)	92 (37.7)	**244 (100)**
No	21 (22.6)	72 (77.4)	**93 (100.0)**
Health condition			
Good	68 (70.8)	28 (29.1)	**96 (100)**
Fair/ Bad	105 (43.6)	136 (56.4)	**241 (100)**

Source: Sample survey data (2015-16)

It is also observed that all the respondents below HSLC level of education were found in the rural area while, almost all the respondents were found to be above up to middle school level in urban area. Majority of the respondents in the urban area with higher level of education were found to be not engaged themselves in any economic activities.

So far as male–female distribution is concerned, It is seen from the above **Table – 4.10** that females were not engaged in any gainful employment.

Amongst the economically independent respondents not engaged in gainful employment 62.3 per cent was found in the rural area. On the contrary to this, elderly with economic dependency were found not working (77.4 per cent) in the urban area.

While analyzing the effect of health on the non-engagement in the gainful employment of the elderly, it is observed that the proportion of the elderly with good health but not working was lower in the urban area compared to the rural area. in the urban area.

4.4 Binary Logit Regression Analysis of the Determinants of Work Participation of the Elderly Respondents

An attempt has been made in this section to assess the effects of each back ground variable on the work participation of the elderly people of the selected study area. For this, binary logit regression has been carried out for the 60 years and above age group of the population The two categories used for the respondent variable (i.e. 60 years age and above) in the model are coded 'No' with '0' and 'yes' with '1'.

The back ground variables entered in the model as predictor variables are as follows: (i) Place of the residence (ii) Sex of the respondents (iii) Current Age of the Respondents above 60 years of age , (iv) Respondent's Educational status, (v) Respondent's economic dependency, (vi) Marital status, (vii) Health conditions.

4.4.1 Framework of the Binary Logit Regression Model

In order to evaluate the effects of a selected group of various socio-economic and demographic variables on the probability of work participation of the elderly (60 years and above age group) we have adopted binary logit regression model. For this, three binary logit regressions have been carried out separately, for total work participation of the elderly, work participation of the rural elderly and work participation of the urban

elderly. Binary logistic regression model is an appropriate statistical technique because the dependent variable is dichotomous. The logistic regression model for the log odds of work participation is,

$$\mathit{l}n\,[P_i / 1\text{-}P_i] = \beta_o + \sum_{i=1}^{n} (\beta_i X_i) + \mu \quad [\text{where, } n=7]$$

Where,

$\mathit{l}n\,[P_i / 1\text{-}P_i]$ is simply the conditional odds of work participation , X_i represents the explanatory variables used in the equation β_i represents the effects of parameters associated with the explanatory variables, β_o is the constant term and μ is the residual.

In this study, we have used SPSS 16 version software for the logistic model.

The equation for the total work participation is as follows,

$$\mathit{l}n\,[P_i / 1\text{-}P_i]_{(WP)} = \beta_{0\,((WP)} + \beta_1 X_{1\,(WP)} + \beta_2 X_{2\,(WP)} + \ldots + \beta_7 X_{7\,(WP)} \quad \ldots\ldots\ldots\ldots(1)$$

Where,

X_1 = Place of residence of the respondents,

X_2 = sex of the respondents,

X_3 = age of the respondents

X_4 = educational status of the respondents

X_5 = economic dependency of respondents,

X_6 =marital status,

X_7 =health condition

Similarly, the second equation for the rural work participation is as follows.

$$\mathit{l}n\,[P_i / 1\text{-}P_i]_{(R)} = \beta_{0\,((R)} + \beta_1 X_{1\,(R)} + \beta_2 X_{2\,(R)} + \ldots + \beta_6 X_{6\,(R)} \quad \ldots\ldots\ldots\ldots(2)$$

Where,

X_1 , X_2, X_3, ...X_6 are defined as in (1)

The third equation for the urban work participation is as follows,

$$\mathit{ln}\,[P_i / 1\text{-}P_i]_{(U)} = \beta_{0\,((U)} + \beta_1 X_{1\,(U)} + \beta_2 X_{2\,(U)} + \ldots + \beta_6 X_{6\,(U)} \quad \ldots\ldots\ldots\ldots (3)$$

Where,

X_1 , X_2, X_3, ...X_6 are defined as in (1)

4.4.2 Results and Interpretation

The logit odds ratios tables of work participation of the elderly – total (**Table - 4.11**), rural (**Table-4.12**) and urban (**Table-4.13**) show that the predictor variables like, sex, age, education, economic dependency, marital status and health condition are statistically highly significant.

An interpretation of the results of the binary logit regression shows that the work participation of the male elderly as a whole is 5.564 times more (significant at 1% level) than the female elderly in the reference category **(Table-4.11).** Similarly, the work participation of the male elderly is likely to be 3.884 times and 1.065 times more (p-value being .000) in the rural area (**Table-4.12**) and urban areas (**Table-4.13**) respectively.

As regards the variable, age, the logit odds of work participation, has been observed to be 4.091 times more (statistically significant at 1% level) amongst the elderly in the 60-69 years age group than the elderly in the reference category (i.e., 80 years and above

age group). Similarly, elderly in the age group of 70-79 years are found to participate in the work force 2.018 times more than the elderly in the reference category (*p-value being 0.042).* The probability of work participation of the rural elderly respondents in this age group is 1.808 times more than the reference category but the work participation of the urban elderly respondents are found to be insignificant in the same age category. The work participation of the elderly is significantly higher in the age category 60-69 years both in the rural and urban areas (odds ratios being 3.057 and 1.498 respectively) compared to the reference category of 80 years and above. This finding of the binary logit regression indicates that participation in the gainful employment by the elderly decreases with increase in age.

The odds ratio of the total work participation of elderly also show that the elderly with education below matriculation and education up to HSLC/HS are likely to participate more in gainful employment (odds ratio being 4.735 and 1.107) than the elderly with education up to graduate and above (reference category). Same trend has also been found in the urban area. On the contrary, in the rural area the odds of work participation of the elderly is found to be 3.459 and 4.265 times more amongst the elderly with who attained education up to primary school and illiterates respectively compared to the elderly in the reference category (**Table-4.12**).

A highly statistically significant relationship has also been observed between the work participation and the economic independency of the elderly. The odds of work participation (**Table- 4.11**) is observed to be 2.968 times more amongst the elderly who are economically dependent than that of the elderly in the reference category. Economically dependent elderly with no income security and social security have no

option but to engage themselves in work participation even at their advanced age. The association between the economic independency and the work participation of the elderly is also observed to be highly significant in both the rural and urban areas.

To examine the relationship between the marital status of the elderly and work participation of the elderly, we have mainly categorised the elderly in our study into two categories i.e., currently married and others. Others include unmarried/ separated/ divorced / widow /widower. The binary logit regression exhibits that the probability of overall participation in the gainful employment by the elderly in the 'other' category is 2.888 times more with P-value being .001 than that of the elderly who are currently married (reference category). The odds ratios of rural and urban work participation tables have also shown the highly significant relationship between the marital status and the work participation of the elderly respondents. This finding of the present study may be interpreted that the elderly other than the currently married elderly, mostly lack familial support and hence the work participation is inevitable for them.

It is well known that good health results in greater participation in gainful work particularly at later age. The binary logit regression on work participation of the elderly exhibits that elderly with good health are nearly three times more likely to work (odds ratio being 2.968) as compared to the elderly who are not in good health (reference category). Health has also been found to have a significant influence on the work participation of the elderly both in the rural and urban areas (**Table-4.12 and 4.13**).

Table- 4.11

Binary Odds Ratios of Work Participation of Elderly by Some Selected Variables

Socio-economic variables	*β*	Standard Error	Odds Ratio	*p*- value
Place of residence:				
Urban (*Ref)*				
Rural	-1.395	1.772	.248	.431
Sex:				
Female (*Ref*)				
Male	4.463	.753	5.564	.000***
Age:				
80 years and above(*Ref*)				
60-69 years	4.497	.918	4.091	.000***
70-79 years	1.980	.864	2.018	.042**
Education :				
Graduate and above *(Ref)*				
Under graduate (passed HSLC/ HS)	4.096	.693	1.107	.000***
Under HSLC	4.107	.829	1.735	.030**
Up to middle level	-6.640	1.501	2.667	.868
Up to primary level	3.759	1.681	2.473	.913
Illiterate	-1.674	1.832	3.365	.627
Economic independency:				
Yes (*Ref*)				
No	3.496	.829	2.968	.000***
Marital status :				
Currently married (*Ref*)				
Others	1.061	.740	2.888	.027**
Health condition:				
Not good *(Ref)*				
Good	3.287	.521	2.968	.000***
Constant = - 13.193 :				
R^2 *= 0.797 (Nagelkerke)*				
-2 log likelihood = 230.497				

Note: (ref) denotes reference category.
****Indicates significant at 1% i.e. p < 0.01.*
***Indicates significant at 5% i.e. p < 0.05.*

Table- 4.12
Binary Odds ratios of work participation of the Rural Elderly by some selected variables

Socio-economic variables	*β*	S.E	Odds ratio	*p*- value
Sex:				
Female (*Ref*)				
Male	3.130	3.304	3.884	.000***
Age:				
80 years and above(*Ref*)				
60-69 years	4.780	.351	3.057	000***
70-79 years	2.055	1.325	1.808	.037**
Education :				
Graduate and above *(Ref)*				
Under graduate (passed HSLC/ HS)	-0.096	1.211	.849	.523
Under HSLC	2.359	1.202	.215	.259
Up to middle level	-6.225	1.297	.085	.456
Up to primary level	4.149	.372	3.459	.003***
Illiterate	2.487	.813	4.265	.001***
Economic independency:				
Yes (*Ref*)				
No	2.487	1.201	2.469	.015**
Marital status :				
Currently married (*Ref*)				
Others	3.402	.591	1.495	.001***
Health condition:				
Not good *(Ref)*				
Good	2.597	.710	3.023	.001***
Constant : - 17.682 : R^2 *= 0.723 (Nagelkerke) -2 log likelihood = 226.837*				

Note: (ref) denotes reference category.
****Indicates significant at 1% i.e. p < 0.01.*
***Indicates significant at 5% i.e. p < 0.05.*

Table- 4.13

Binary Odds ratios of work participation of the Urban Elderly by some selected variables

Socio-economic variables	*β*	Standard Error	Odds ratio	*p*- value
Sex:				
Female (*Ref*)				
Male	4.599	.748	1.065	.000***
Age:				
80 years and above(*Ref*)				
60-69 years	4.635	.791	1.498	.000***
70-79 years	.598	.878	1.592	.859
Education :				
Graduate and above *(Ref)*				
Under graduate (passed HSLC/ HS)	3.048	1.146	1.857	.000***
Under HSLC	2.345	1.207	2.035	.030**
Up to middle level	-3.759	1.042	.542	.569
Up to primary level	2.917	1.320	.681	.396
Illiterate	4.674	1.519	.254	.542
Economic independency:				
Yes (*Ref*)				
No	1.451	.599	2.158	.000***
Marital status :				
Currently married (*Ref*)				
Others	2.348	.787	2.426	.012**
Health condition:				
Not good *(Ref)*				
Good	3.876	.515	3.221	.000***
Constant : - 16.458 :				
R^2 = *0..658 (Nagelkerke)*				
-2 log likelihood = 285.820				

Note: (ref) denotes reference category.

****Indicates significant at 1% i.e. p < 0.01.*

***Indicates significant at 5% i.e. p < 0.05.*

4.5 Conclusion

Majority of the rural elderly compared to their urban counterparts were engaged in gainful employment on account of the prevailing large scale poverty in the rural area.

Large proportion of the elderly's work participation was under compulsion and majority of them belonged to the young old age category (60-69 years). It implies that these elderly people do not have any alternatives but to engage themselves for their survival and in this situation, rural elderly, were found to be more vulnerable in comparison to that of the urban elderly. Engagement in economic activities under compulsion to support one's family was found to be higher in case of the rural elderly while in the case of urban elderly it was to support oneself.

The finding of binary logit regression also shows that probability of economically dependent elderly to participate in gainful activity was found to be 2.968 times more than that their economically independent counterparts.

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Chapter-5
Health and Functional Status of the Elderly

5.1 Introduction

Biological ageing is associated with health problems. As the age of a person increases, problem of health also aggravates. Most demographers have interest in the study of elderly population and consider health an appropriate segment of demographic study (Seigal, 1980). The assessment of physical health plays a prominent role in all the phases of medical care and planning. Good health facility not only can delay ageing but also keep individuals in fit and active form that ultimately leads to healthy ageing (Nath and Deka, 2005) and when number of aged are in good health and also economically productive, the aged with problems will be narrowed down to a few (Gurumurthy,1998). Kinsella and Phillip (2005) stated that a successful life is absolutely dependent on healthy ageing (ability remain physically and mentally fit). It is believed that health problems of the aged people are the most concerned issue from the social point of view as elderly people are more prone to suffer from ill health than younger people. In most of the primary surveys, the Indian elderly in general and the rural elderly in particular are assumed to have some health problems. An attempt has been made in our present study to have an assessment of the overall health status of the elderly people in the selected district.

The chapter has been divided into two sections. In section-A, focus has been made on general health problems, multiple chronic diseases of the elderly, access to hospital utility services, medical support and care and also cross table analysis for some socio-

economic and demographic background variables for health conditions of the elderly. Section– B discusses functional status of the elderly with the help of activities of daily living (ADL) index developed by Katz and an ordered logit regression has also been carried out to assess the determinants of the ADL of the elderly.

Section – 5. A

Health Status of the Elderly

5.A.1 Health problems of the elderly

It is often believed that ageing is accompanied by multiple illnesses and physical ailments. In respect to this, focus has been made on the common health problems of the elderly people in the present study area.

Table- 5.1

Health problems of the Elderly
(Figures in parenthesis show percentage)

Health problems	Yes
Fever	293 (55.6)
Headache	140 (26.6)
Dizziness	12 (2.3)
Having no energy	246 (46.7)
Sleeplessness	93 (17.6)
Chest pain	172 (32.6)
Joint pain	389 (73.8)
Incontinence	148 (28.1)
Stomach problem	126 (23.9)
Hearing problem	177 (33.6)
Vision problem	165 (31.3)

Source : Field survey data (2015-16).

The above **Table-5.1** shows the common health problems faced by the elderly people of the present study area. Majority of the elderly reported having health problems like joint paint (73.8 per cent) and fever (55.6 per cent). Less than half of the elderly was found reporting “having no energy” while, health problems like, hearing impairment, vision problems and chest pain were observed to vary from 33 per cent to 30 per cent.

The rural urban break-up of the percentage distribution of the health problems of the elderly (**Table-5.2)** shows that the rural elderly were more vulnerable to general health problems compared to the urban elderly. Insufficient health service and poor economic background of the respondents in the rural area were considered as the obvious reasons for their poor health condition.

Table- 5.2

Health problems of the Elderly: Rural-Urban
(figures in parenthesis show percentage)

Health problems	Rural	Urban	Total
Fever	189 (64.5)	104 (35.5)	293 (100)
Headache	104 (74.3)	36 (25.7)	140 (100)
Dizziness	3 (33.3)	9 (66.7)	12 (100)
Having no energy	137 (55.7)	109 (44.3)	246 (100)
Sleeplessness	46 (49.5)	47 (50.5)	93 (100)
Chest pain	122 (70.9)	50 (29.1)	172 (100)
Joint pain	225 (57.8)	164 (42.2)	389 (100)
Incontinence	46 (31.1)	102 (68.9)	148 (100)
Stomach problem	105 (83.3)	21 (16.7)	126 (100)
Hearing problem	90 (50.8)	87 (49.2)	177 (100)
Vision problem	114 (69.1)	51 (39.9)	165 (100)

Source : Field survey data (2015-16)

5.A.2. Multiple Chronic Diseases of the Elderly Respondents

Apart from common health problems, multiple chronic health problems are also an important aspect in the study of ageing population. It is not considered as unnatural if an elderly suffers from health problems as the elderly are prone to chronic diseases.

Table- 5.3

Elderly by Chronic Diseases

(figures in parenthesis show percentage)

Diseases	**Yes**	**No**
Arthritis	156 (29.6)	371 (70.4)
Asthma	87 (16.5)	440 (83.5)
Alzheimer	21 (3.9)	506 (96.1)
Diabetes	192 (36.4)	335 (63.6)
Cancer	57 (10.8)	470 (89.2)
Heart disease	195 (37.0)	332 (63.0)
Osteoporosis	56 (10.6)	471 (89.4)
Respiratory problems	164 (31.1)	363 (68.9)
Incontinence	148 (28.1)	379 (71.9)
Hearing problem	177 (33.6)	350 (66.4)
Vision problem	165 (31.3)	362(68.7)
Blood pressure	436 (82.7)	91 (17.3)

Source : field survey data (2015-16)

If an elderly suffers from a disease continuously for more than a long period of one year, then he or she is considered as having chronic health problems or chronic disease in our present study.

It has been observed in the **Table-5.3,** that among the twelve chronic diseases (as canvassed in our survey), more than four fifth elderly reported having blood pressure (82.3 per cent) while, one third elderly respondents found reported suffering from Diabetes, Heart disease, respiratory problems and followed by Arthritis (29.6 per cent), Asthma (16.5 per cent), Cancer (10.8 per cent), Osteoporosis (10.6 per cent) and less

than five per cent of the elderly have been recorded suffering from Alzheimer problems**.**

Table-5.4
Elderly by Chronic Diseases: Rural-Urban
(*figures in parenthesis show percentages)*

Chronic diseases	Rural	Urban	Total
Arthritis	86 (55.1)	70 (44.9)	156 (100)
Asthma	32 (36.8)	55 (63.2)	87 (100)
Alzheimer	12 (57.5)	09 (42.5)	21 (100)
Diabetes	31 (16.1)	161 (83.9)	192 (100)
Cancer	23 (24.6)	34 (75.4)	57 (100)
Heart disease	59 (30.2)	136 (69.8)	195 (100)
Osteoporosis (orthopedic problem)	32 (57.1)	24 (48.9)	56 (100)
Respiratory problems	71 (43.3)	93 (56.7)	164 (100)
Incontinence	46 (31.1)	102 (68.9)	148 (100)
Hearing problem	90 (50.8)	87 (49.2)	177 (100)
Vision problem	114 (69.1)	51 (39.9)	165 (100)
Blood pressure	216 (49.5)	220 (50.5)	436 (100)

Source: field survey data (2015-16)

It is observed (**Table- 5.4**) that the chronic diseases like Asthma, Cancer, Heart disease and Respiratory problems were found to be higher amongst the urban elderly compared to their rural counter parts while; the other chronic diseases like Alzheimer, Osteoporosis and Arthritis were found to be comparatively higher amongst the rural elderly.

So far as male – female break up is concerned, **Table-5.5** shows that the male elderly suffered more from chronic diseases like Asthma, Diabetes, Heart disease, and Respiratory problems compared to their female counterpart.

Table-5.5

Elderly with Chronic Diseases: Sex
(*figures in parenthesis show percentages)*

Diseases	Male	Female	Total
Arthritis	48 (30.8)	108 (69.2)	156 (100)
Asthma	59 (67.8)	28 (32.1)	87 (100)
Alzheimer	08 (38.1)	13 (61.9)	21 (100)
Diabetes	107 (55.7)	85 (44.3)	192(100))
Cancer	23 (40.4)	34 (59.6)	57 (100)
Heart disease	127(65.1)	68 (34.9)	195 (100)
Osteoporosis	13 (23.2)	43 (76.8)	56 (100)
Respiratory problems	130 (79.2)	34 (20.7)	164 (100)

Source: field survey data (2015-16)

It is observed that almost four fifth of the male elderly reported suffering from chronic respiratory problem, two third elderly recorded suffering from chronic Asthma, chronic Heart problems, chronic Diabetes (55.7 per cent) and followed by other diseases. Compared to the male elderly, female elderly were found to be more vulnerable to the chronic diseases like Arthritis, Cancer, Alzheimer and Osteoporosis. Three fourth of the female elderly were observed to be reported having Osteoporosis followed by Alzheimer (three fifth of the female elderly) and Cancer (59.6 per cent).

5.A.3 Access to Hospital Utility Service

Access to hospital utility service facility is an important aspect in the later life of an individual. Preference and accessibility for the health utility services are considered to have some influence on the health of the elderly. In this regard, information about hospital preference of the elderly, reasons for preferring the hospital and accessibility to medicine of the elderly were collected to assess the status of the hospital utility services in our present study.

Table- 5.6

Access to hospital of the elderly by preference

(*figures in parenthesis show percentages)*

Hospital	Rural	Urban	Total
Government	211 (72.0)	92 (39.3)	**303 (57.5)**
Private	27 (9.2)	107(45.7)	**134 (25.4)**
Both (Government & Private)	55 (18.8)	35 (15.0)	**90 (17.1)**
TOTAL	**293 (100)**	**234 (100)**	**527 (100**

Source: Field survey data (2015-16)

In the present study, hospital preference of the respondents is shown in the above **Table- 5.6**. Out of the total of 527 respondents, 57.5 per cent preferred going to government hospital, 25.4 per cent preferred private hospital while 17.1 per cent respondents preferred both government and private hospital. So far as place of resident was concerned, it is also observed that majority (nearly three fourth) of the rural elderly went to government hospital while, only 9.2 per cent and 18.8 per cent preferred private hospital and both government and private hospital respectively. In urban area, 45.7 per cent respondents reported that they prefer to go private hospital when they fell sick while, 39.3 per cent preferred government hospital and only 15 per cent showed their preference for both government and private hospital.

Table-5.7

Preference for government hospital by reasons: Rural-Urban

(figures in parenthesis show percentages)

Reasons	Rural	Urban	Total
Free medicine	195 (78.6)	59 (40.7)	**254 (64.6)**
Located nearby	34 (13.7)	72 (49.6)	**106 (27.0)**
Both	19 (7.7)	14 (9.7)	**33 (8.4)**
Total	**248 (100)**	**145 (100)**	**393 (100)**

Source : Field survey data (2015-16)

We have categorized the reasons for choosing government hospital into three categories.-free medicines, located nearby and both (free medicine and located

nearby.). **Table-5.7** exhibits that nearly two third of the elderly (64.6 percent) preferred to go to government hospital because of the provision of free medicine while, 27 per cent elderly were found visiting government hospital because it was located nearby to his residence. Only 8.4 per cent reported that they preferred to visit both government and private hospital according to their convenience.

The major reason found for preferring government hospital in case of rural elderly was found to be the provision for free medicine (78.6 per cent). On the other hand, short distance from their residence to the government hospital was the major reason for the urban elderly for preferring government hospital (50 per cent). However, although provision of free medicine was cited by 78.6% of the rural elderly as the reason for preferring government hospitals (**Table-5.7**), 54.9% of the above mentioned respondents reported that they did not obtain all the prescribed medicines and the rest (45.1 per cent) reported that they obtained none (**Table-5.8**). This indicates that the need for medicine of 109 elderly respondents (20.7 per cent) in the field study area remained unmet.

Table-5.8

Access to medicine of the elderly preferring Government Hospital for the provision of free medicine: Rural-Urban

(figures in parenthesis show percentages)

Accessibility to required medicine	Rural	Urban	Total
All medicine	--	--	
Some medicine	107 (54.9)	38 (64.4)	**145 (57.1)**
None	88 (45.1)	21 (35.6)	**109 (42.9)**
Total	**195(100)**	**59 (100)**	**254 (100)**

Source : Field survey data (2015-16)

5.A.4 Medical Support and Care

Medical support and care has also been considered to be an important determinant of health conditions of the elderly. To have a proper assessment of the support and care

of the elderly, we intended to know from the elderly respondents regarding the medical attention and assistance that they usually received from their family members, if not, the reasons for not getting medical attention and medical assistance.

Table-5.9

Immediate medical attention received by the elderly from their family members: Rural-Urban

(*figures in parenthesis show percentages)*

Medical attention	Rural	Urban	Total
Yes	45 (15.4)	132 (56.4)	177(33.6)
No	248 (84.6)	102 (43.6)	350 (66.4)
Total	**293 (100)**	**234 (100)**	**527(100)**

Source : Field survey data (2015-16)

In response to the query that whether the respondents received medical attention from their family members when they fell sick, 33.6 per cent reported 'yes' while, two third of the elderly reported 'no'. In the rural area, 84.6 per cent elderly reported they did not receive any medical attention while, 55.4 per cent urban elderly reported they received medical attention (**Table-5.9**)

Table-5.10

Reasons for not getting immediate medical attention

(*figures in parenthesis show percentages)*

Reasons	Total
No money	242 (46.0)
Apathy from the family	282 (55.5)
No treatment facility	214 (40.6)
Expensive treatment	33 (6.3)

Source: Field survey data(2015-16)
Multiple responses

Since majority of the elderly in our present study, was found "not getting medical attention" **(Table- 5.10),** so we desired to know the reasons for not getting medical attention. For this query, we categorized the reasons into four possible categories- no money, apathy from the family, no treatment facility in nearby hospital and expensive

treatment. The responses in the reason categories like- no money, apathy from the family and no treatment facility in nearby hospital were recorded as 46.0 per cent, 55.5 per cent and 40.6 per cent respectively while, 6.3 per cent response was recorded in the reason category of expensive treatment.

Table-5.11

Medical assistance(Physical and financial on a long term basis) received by the elderly

(figures in Parenthesis show percentages)

Assistance	**Total = 177 (100)**
Spouse	69 (39.0)
Children	84 (47.4)
Relatives	17 (9.6)
Others (NGO/Community)	07 (4.0)

Source: field survey data (2015-16)

Table-5.11 depicts the proportion of the medical assistance received by the elderly respondents by source. In our study, medical assistance includes both physical care as well as financial support to the elderly. It is noticed that out of 177 respondents who received medical assistance, 47.4 percent received the assistance from their children, 39 per cent from spouse, 9.6 per cent from relatives and 4 per cent from others such as, NGO or Community etc.

5.A.5 Health Status of the Elderly Respondents with Selected Socio-economic and Demographic Background variables

Apart from medical care and support, socio-economic and demographic factors may have a significant impact on the health conditions of an individual and hence the elderly. In our present study, a few selected

Table-5.12

Health Conditions of the Elderly With Some Selected Socio-Economic Background Variables

(figures in Parenthesis show percentages)

Socio-Economic Variables	**Health Conditions of the Elderly**		
Age Category	**Good**	**Bad**	**Total**
60-69 years	116 (37.5)	193 (62.5)	**309 (100)**
70-79 years	41 (27.0)	111 (73.0)	**152 (100)**
80 years and above	07 (10.6)	59 (89.4)	**66 (100)**
Chi-square= 14.985 df=2 significant at 1% level			
Educational level			
Illiterate	19 (15.7)	102 (84.3)	**121 (100)**
Educated Up to primary level	15 (16.1)	78 (83.9)	**93 (100)**
Educated Up to middle level	20 (69.0)	09 (31.0)	**29 (100)**
Educated Up to HSLC	42 (38.2)	68 (61.8)	**110 (100)**
Passed HSLC/ HS	33 (36.7)	57 (63.3)	**90 (100)**
Passed graduation & above	35 (41.7)	49 (58.3)	**84 (100)**
Chi-square== 55.729 df=1 significant at 1% level			
Income level (Monthly)			
Less than Rs.5000/=	07 (5.9)	112 (94.1)	**119 (100)**
Rs.5000/ to 10000/=	35 (34.0)	68 (66.0)	**103 (100)**
Rs.10,000/ to Rs. 20000/=	74 (38.3)	119 (61.7)	**29 (100)**
Rs. 20000/= & above	48 (42.9)	64(57.1)	**110 (100)**
Chi-square=47.648 df=3 significant at 1% level			
Marital status			
Married	111 (38.3)	179 (61.7)	**290 (100)**
Un married	2 (28.6)	05 (71.4)	**07 (100)**
Widow / Widower	46 (22.1)	162 (77.9)	**208 (100)**
Divorced / separated	5 (22.7)	17 (77.3)	**22 (100)**
Chi-square=26.899 df=3 significant at 1% level			
Social contacts			
Yes	113 (71.1)	46 (28.9)	**159 (100)**
No	51 (13.9)	317 (86.1)	**368 (100)**
Chi-square=1.475 df=1 significant at 1% level			
Working Status			
Working	69 (36.3)	121 (63.7)	**190 (100)**
Not working	95 (28.2)	242 (71.8)	**337 (100)**
Chi-square=3.743 df=1 significant at 10% level			
Total	**164 (31.1)**	**363 (68.9)**	**527 (100)**

Source : field survey data, (2015-16)

background variables like, age, education, marital status, income, social contacts and present work status have been selected to examine the perceived health conditions of

the elderly. We categorized health condition of the elderly as good, fair and bad. We considered good health condition of the elderly only if the respondents did not suffer from major diseases like cancer arthritis, diabetes asthma heart diseases etc and had no records of hospitalization in last six months and we categorised health condition as fair if the elderly suffered from some diseases but had no records of hospitalization in last six months. Bad health condition referred to only if the respondents suffered from major diseases with frequent visit to the hospital and also had the record of hospitalization in last one year. For our analysis, we have categorized health condition into two categories - good health condition and bad health condition. In this respect, we clubbed fair and bad into one category.

In **Table -5.12,** it is clearly pronounced that at lower age category (60-69 years), health conditions of the elderly was found to be good compared to the other age categories. As age increases, health conditions of the elderly deteriorate. Almost nine out of ten elderly was found having bad health condition in the 80 years and above age category.

Table-5.12, exhibits a positive relation between the level of education and the health conditions of the elderly. It is obvious that in old age, people suffer from different diseases. Hence, a better health condition of the elderly people cannot be expected. But an educated elderly can take care of his or her health in a better way compared to the illiterate persons. Out of 121 illiterate elderly, only 15.7 per cent reported good health condition. In contrast to this, 41.7% of the elderly with graduation and higher educational qualification were found to be in good health.

Income of the respondent is found to be one of the important variables having a positive effect on the health condition of the elderly. It is significantly revealed that at higher level of income, more accessibility to medical facilities was found in our present study. **Table–5.12** shows that more than nine tenth (94.1 per cent) of the elderly belonging to income category of less than Rs. 5000/-, reported bad health while, less than three fifth (57.1 per cent of the elderly) in the higher income category of Rs. 20,000/- and above reported bad health.

It is significantly observed that comparatively at higher income level, more proportions of the elderly respondents were found to be in good health condition.

So far marital status of the elderly is concerned; it is observed that currently married elderly were found to be in good health conditions in comparison to the unmarried, widower/ widow and divorced /separated elderly. This may be viewed that in a conjugal life, both the persons extend care and emotional support to each other which helps them to lead a healthy life in the later age of their lives.

Social contact is an important aspect in the life of the elderly people. A socially active elderly gets mental relaxation. As a result, it has a positive impact on the health of the elderly. It is evident from the **Table-5.12** that elderly respondents with having social contacts were found to be in good health condition as against of those who were not found active in social life at their later age. Thus, 71.1 per cent of the elderly reported good health condition in the “Yes” category while, only 13.9 per cent was observed with good condition of health in the “No” category. It may be viewed that there exists a

positive association between the social contacts and the health conditions of the elderly in our study area.

A significant finding from the above **Table-5.12** is that, the health conditions of the elderly in the "working" category was reported comparatively good (36.3 per cent) than that of the elderly who were in the "not working" category (28.2 per cent). Likewise, the proportion of bad health conditions was observed to be more amongst the elderly in the non working category than that of their not-working counterparts. It may be viewed that irrespective of the health condition, elderly respondents in the working category, were observed to be in a better position compared to the elderly who were in the "Not working" category.

5.A.6 Multiple chronic diseases of the elderly with selected socio-economic and demographic background characteristics of the respondents

In our study, we have observed that more than two third of the elderly respondents were having at least one chronic disease **(Table-2.17).** At later stage of life of a person, suffering from chronic diseases is not considered as unnatural. Besides physiological reasons, socio-economic and demographic factors have some impacts on the overall health status of the elderly and hence the chronic diseases. The present study attempts to observe the impact of such variables like age, education, income level, marital status, social contacts and working status of the elderly people on chronic diseases.

Number of chronic diseases and age of the aged persons were observed to be closely related. With the increase in the age, the elderly were found to be plagued with multiple chronic diseases. **Table-5.13 shows** that the proportion of the elderly respondents in the age group of 80 years and above suffering from two or more than three chronic diseases was more compared to their counterparts in the lower age groups. On the contrary, the elderly in the age group 60 – 69 years reported lager in numbers, having one chronic disease.

The elderly with higher income level, having one chronic disease, were found to be less in proportion compared to that of the elderly with lower income level (i.e. less than Rs.10,000/=). The same trend was also observed in the elderly having two chronic diseases. But the level of income was observed to have no such relation in case of the elderly suffering from more than two chronic diseases. Thus, the level of income was observed to have no definite relationship with multiple chronic diseases of the elderly.

Table – 5.13 also depicts marital status and number of chronic diseases of the elderly. Most of the elderly were observed having two numbers of chronic diseases. It is also found that 3.7 per cent elderly widow were observed to be suffering from one chronic disease followed by married elderly (21.7 per cent) and elderly widower (40 per cent).

Table-5.13

Chronic disease of the Elderly with some selected Socio-economic back ground variables

(figures in Parenthesis show percentages)

Socio-economic variables	**No. of chronic diseases**			**Total**
Age category	**One**	**Two**	**Three & above**	
60-69 years	47 (25.8)	108 (59.3)	27 (14.8)	**182(100)**
70-79 years	19 (14.4)	83 (62.9)	30 (22.7)	**132(100)**
80 years and above	02 (3.6)	28 (50.0)	26 (46.4)	**56(100)**
Place				
Rural	43 (21.3)	120 (59.4)	20 (9.9)	**202 (100)**
Urban	25 (14.9)	99 (58.9)	44 (23.2)	**168 (100)**
Educational level				
Illiterate	15 (13.8)	83 (76.1)	11 (10.1)	**109 (100)**
Educated Up to primary level	39(46.4)	27 (32.1)	18 (21.4)	**84 (100)**
Educated Up to middle level	0 (00)	0 (00)	9 (100)	**9 (100)**
Educated Up to HSLC	7 (9.3)	(35) 46.7	33 44.0)	**75 (100)**
Passed HSLC/ HS	7 (21.2)	26 (78.8)	0(00)	**33 (100)**
Passed graduation & above	0 (00)	48 (80.0)	12 (20.0)	**60 (100)**
Income level (Monthly)				
Less than Rs.5000/=	26 (21.8)	74 (62.2)	19 (16.0)	**119 (100)**
Rs.5000/ to 10000/=	26 (35.1)	40 (54.1)	8 (10.8)	**74 (100)**
Rs.10,000/ to Rs. 20000/=	9 (8.5)	63 (59.4)	34 (32.1)	**106 (100)**
Rs. 20000/= & above	7 (9.9)	42 (59.2)	22 (31.0)	**71 (100)**
Marital status				
Married	45 (21.7)	130 (62.8)	32 (15.5)	**207 (100)**
Unmarried	07 (100)	0 (00)	0 (00)	**07 (100)**
Widow	4 (3.7)	75 (68.8)	30 (27.5)	**109 (100)**
Widower	12 (40.0)	9 (30.0)	09 (30.0)	**30 (100)**
Divorced / Separated	0 (0)	5 **(**29.4)	12 (70.6)	**17 (100)**
Social contact				
Yes	18 (32.1)	32 (57.1)	6 (10.7)	**56 (100)**
No	50 (16.3)	181(59.2)	75 (24.5)	**306 (100)**
Working status				
Yes	32 (23.9)	94 (70.1)	8 (6.0)	**134 (100)**
No	36 (15.3)	125 (53.0)	75 (31.8)	**236 (100)**

Source: Field survey data, (2015-16)

An interesting observation is that, in case of the elderly suffering from more than three chronic diseases, married elderly were found to be in an advantageous position (15.5 per cent) in comparison to widow/widower and divorced/separated elderly.

The interaction of social contacts with the number of chronic diseases of the elderly as depicted in the **Table-5.13** shows that elderly persons having social activities were found to be less plagued of by chronic diseases. This may be due to the functional mobility and the mental satisfaction of the elderly which they derive from the social contacts. This finding of our present study corroborates the findings of the studies made by Sharma, 1971 and Murthi, 1970. Both the studies found social contact and good health of the elderly persons were closely associated with their wellbeing and happiness. Activities (working) of the elderly were found to have a positive effect on their health. It is observed that nine tenth of the elderly suffering from more than two chronic diseases belonged to the non-working category while, the rest belonged to the working category. In the other two categories of chronic diseases (one or two chronic diseases) same trend has been observed.

SECTION –5.B

Functional Status of the Elderly (Activities of Daily Living)

Functional status of the elderly can be understood as the ability to take self-care, self maintenance and physical activities and movements. Aged persons face difficulties in these areas and as a consequence, they become less physically independent and their daily tasks become much difficult for them to perform. To measure their functional status, one of the methods is construction of index of independence in Activities of Daily Living (ADL) developed by Katz, commonly referred to Katz ADL. It is an ordinal index designed to assess the functional capabilities of the elderly people using a dichotomous rating (dependent/independent) of six ADLs ordered from lower independency to higher independency. The six ADLs are – bathing, dressing, feeding, use of the toilet, transferring and continence. A person is considered independent in the conduct of ADL if he or she can perform his or her daily activities without taking assistance from anyone. ADL is considered as an important aspect of the area of research of ageing population.

5. B.1 ADL of the Elderly Respondents: Rural-Urban

Table-5.14

ADL status of the Elderly: Rural-Urban

(figures in Parenthesis show percentages)

ADL	Rural	Urban	Total
Independent	208 (71.0)	85 (36.3)	293 (55.6)
Dependent	85 (29.0)	149 (63.7)	234 (44.4)
Total	293(100)	234 (100)	527 (100)
Chi-square : 63.328	*df=1*	significant at 1%	

Source : Field survey data (2015-16)

It is observed from the **Table-5.14** that out the total of 527 respondents of the present study, 293 (55.6 per cent) could perform their chores without any assistance. The rural-urban differential in activities of daily living of the respondents in the present study (Table-5.14) exhibits that more than three fourth of the rural elderly (71 per cent) were found to be ADL independent as against the total average of the sample i.e., 55.6 percent. In case of urban elderly, the corresponding figure was found to be 36.3 percent.

5.B.2 ADL of the Elderly Respondents: Male-Female

Table-5.15

ADL status of the elderly : Male-Female

(figures in Parenthesis show percentages)

ADL	Male	Female	Total
Independent	152 (51.9)	141 (48.1)	293 (100)
Dependent	79 (33.8)	155 (66.2)	234 (100)
Total	231	296	527(100)
Chi-square:17.343 df=1 significant at 1%			

Source : Field survey data(2015-16)

A gender disparity regarding the independency with respect to ADL of the elderly has also been observed in the present study (**Table-.5.15**). Male elderly were observed to be better off (51.9 percent) than their female counter parts (48.1 percent).

5. B.3 Distribution of the Elderly Respondents with Respect to Conduct of Different ADL: Rural-Urban

Present study also made an attempt to examine the ADL independency amongst the elderly in respect to mainly six selected daily activities like bathing, dressing, feeding, and use of the toilet, transferring and continence.

Table-5.16

Percentage distribution of the elderly with respect to conduct of different ADL : Rural-Urban

(figures in Parenthesis show percentages)

Activities	Rural	Urban	Total
Bathing			
Independence	293 (59.2)	202 (40.8)	**495 (100)**
Dependence	--	32 (100)	**32 (100)**
Dressing			
Independence	268 (60.1)	178 (39.9)	**446 (100)**
Dependence	25 (30.9)	56 (69.1)	**81 (100)**
Feeding			
Independence	279 (54.6)	232 (45.4)	**511 (100)**
Dependence	14 (87.5)	02 (12.5)	**16 (100)**
Use of the toilet			
Independence	265 (65.9)	137 (34.1)	402 **(100)**
Dependence	28 (22.4)	97 (77.6)	125 **(100)**
Transferring			
Independence	260 (74.3)	90 (25.7)	**350 (100)**
Dependence	33 (18.9)	142 (81.1)	**175 (100)**
Continence			
Independence	222 (57.7)	163 (42.3)	**385 (100)**
Dependence	71 (50.0)	71 (50.0)	**142 (100)**

Source : Field survey data (2015-16)

Table-5.16 exhibits that rural respondents were comparatively active and independent in discharging their daily activities. Nearly three fifth of the elderly in the rural area could bathe without any assistance. In the other categories like dressing, feeding, going to the toilet, transference and continence, the percentage of rural elderly were also found to be independent.

5. B.4 ADL of the Elderly Respondents with respect to Socio Economic and Demographic Back Ground Variables.

Table-5.17

ADL status of the Elderly : Broad Age group

(figures in Parenthesis show percentages)

Age group	ADL status		Total
	Dependent	Independent	
60-69 years	57 (18.4)	252 (81.6)	309 (100.0)
70-79 years	123 (80.9)	29 (19.1)	152 (100.0)
80 and Above	54 (81.8)	12 (18.2)	66 (100.0)
Total	**234**	**293**	**527**
Chi square :2.039 df=2 significant at 1%			

Source : field survey data (2015-16)

ADL status of the elderly depends on some socio-economic and demographic variables. In this respect, amongst of the socio-economic and demographic variables age was observed to have a negative influence on the ADL status of the elderly **(Table-5.17).** It is quite obvious that elderly in the lower age categories compared to their counter parts in the higher age categories were found to be more independent of ADL. Thus the proportions of the elderly belonged to the young old age group (60-69 years) was found to be 81.6 per cent while, it was found to be less than one fifth (i.e., 19.7 per cent and 18.2 per cent) in the older old age categories (i.e., 70-79 years and 80 years and above age categories respectively).

Table-5.18

ADL status of the Elderly : Education

(figures in parentheses show percentages)

Educational level	**ADL status**		**Total**
	Dependent	**Independent**	
Illiterate	65 (53.7)	56 (46.3)	**121 (100)**
Educated Up to primary level	38 (40.9)	55 (59.1)	**93 (100)**
Educated Up to middle level	09 (31.0)	20 (69.0)	**29 (100)**
Educated Up to HSLC level	31 (28.2)	79 (61.8)	**110 (100)**
Passed HSLC/ HS	23 (36.7)	67 (71.8)	**90 (100)**
Passed graduation & above	68 (81.0)	16 (19.0)	**84 (100)**
TOTAL	**234 (31.1)**	**293 (68.9)**	**527 (100)**
Chi-square :76.956 df=5 significant at 1%			

Source : field survey data (2015-16)

Present study did not observe any relationship between the level of education and the ADL of the elderly (**Table - 5.18**). Education is not pronounced to have an influence on the functional status of the elderly in our present study area.

Table-5.19

ADL status of the Elderly : Marital status

(figures in parentheses show percentages)

Marital status	ADL status		Total
	Dependent	Independent	
Married	118 (40.7)	172 (59.3)	**290 (100.0)**
Widow	88 (52.1)	81 (47.9)	**169 (100.0)**
Widower	21 (53.1)	18 (46.9)	**39 (100.0)**
Divorced / separated	7 (31.8)	22 (75.9)	**29 (100.0)**
TOTAL	**234 (44.4)**	**293 (55.6)**	**527(100.0)**
Chi-square: 14.056 df=3 significant at 1%			

Source : field survey data (2015-16)

So far the marital status of the elderly is concerned, in the categories of currently married, unmarried, divorced / separated elderly were observed to be independent of ADL. In the categories of widow and widower, no significant difference was noticed in respect to ADL status (**Table-5.19**).

Table-5.20

ADL status of the Elderly : Access to medicine

(figures in parentheses show percentages)

Access to Medicine	ADL status		Total
	Dependent	Independent	
Yes	41 (20.5)	159 (79.5)	200 (100.0)
No	193 (59.0)	134 (41.0)	327 (100.0)
Total	**234**	**293**	**527**
Chi-square;1.347 df=1 significant at 1%			

Source : field survey data (2015-16)

Access to medicine was found to have a positive influence in the ADL status of the elderly. Nearly four fifth (79.5 per cent) of the respondents with access to medicine was observed to be independent of ADL while, less than half of the elderly (41 per cent) with 'no access to medicine' has been observed to be independent of ADL **(Table-5.20).**

Table-5.21

ADL status of the Elderly : Economic independency

(figures in Parenthesis show percentages)

Economic independency	ADL status		Total
	Dependent	Independent	
Independent	120 (49.2)	124 (50.8)	244 (100)
Dependent	114 (40.3)	169 (59.7)	283 (100)
Total	234	293	527 (100)
Chi-square: 10.400 df=1 significant at 1%			

Source : field survey data (2015-16)

Economic independency generally depicts a positive association with the wellbeing of the elderly. But **Table-5.21** shows that economically independent elderly were found to have lower ADL status. It is worth to be mentioned that majority of the economically independent elderly in the present study were concentrated in the urban area (67.1 per cent shown in **Table-2.11**). The sedentary life style of the elderly in the urban area may be viewed as one of the main reasons of such lower status of the ADL of the elderly in the present study. Contrary to this, economically dependent elderly respondents were observed to have a better ADL status.

Table-5.22

ADL status of the Elderly: Health condition

(figures in parenthesis show percentages)

Health condition	ADL status		Total
	Dependent	Independent	
Good	26 (41.0)	138 (59.0)	234 (100.0)
Bad	208 (47.1)	155 (52.9)	293 (100.0)
Total	293	234	527
Chi-square:78.606 df=1 significant at 1%			

Source : field survey data (2015-16)

In the present study general health condition of the elderly was not observed to have a significant influence on their present ADL status (T**able-5.22**). It is true that independent

of ADL may not necessarily indicate good health of the elderly. Functional status of the elderly may be found to be good even with some health problems.

5.B.5 Ordered Logit Regression of ADL of the Elderly

To assess the determinants of the independent status of the elderly with respect to ADL of the elderly people, we have carried out ordered logit regression analysis with some socio- economic and demographic variables.

5.B.5.1 Variables for the regression analysis of the present study: Response variable

Independent status with respect to ADL status is the response variable or the dependent variable for the regression analysis. ADL is qualitative in nature with more than two categories (Six activities). The categories are - independent with respect to 1 activity, 2 activities, 3 activities, 4 activities, 5 activities and 6 activities. These activities are from 1 to 6 and have been placed from lowest score to highest score in order.

Predictor variable:

The predictor variables or the independent variables for the present regression are - (i) Place of the residence (ii) Sex of the respondent's (iii) Current Age of the respondent's (60 years and above), (iv) Respondent's Educational status, (v) Respondent's economic independency, (vi) Marital status, and (vii) social contact. Following **Table-5.23** gives the description of the response variables for the regression analysis.

Table-5.23

Predictor variables for Ordered Logit Regression for ADL of the Elderly

Sl. No	Socio-Economic & Demographic Variables	Predictor Variables
1	**Place of residence (Rural/urban)**	PR = rural coded 1, Urban coded with 0.
2	**Sex (male/female)**	SEX = male coded 1, otherwise female coded with 0.
3	**Age Dummies** **(80 yrs & above is the reference category)**	AGE_2 = coded 1 if the samples are from 60-69 years, otherwise 0. AGE_3 = coded 1 if the samples are from 70-79yrs, otherwise 0.
4	**Education Dummies** **(Illiteracy is the reference category)**	EDU_2= coded 1 if the samples are from Primary /middle, otherwise 0. EDU_3= coded 1 if the samples are from Up to HSLC / HS, otherwise 0. EDU_4= coded 1 if the samples are from Graduate & above otherwise 0.
5	**Economic independency**	ECO= 'yes' coded 1, otherwise= 'no' coded with 0.
6	**Marital status**	MS = currently married coded 1, others coded with 0.
7	**Social contact**	SC = 'yes' coded 1, 'No' coded with 0.

5.B.5.2 Framework of the Ordered Logit model

In order to evaluate the effects of the selected group of various socio-economic and demographic variables, on the probability of the independent execution of the Activities of Daily Living (Katz) of the elderly, we have adopted ordered logit regression model. Here, the ordered logit regression is considered as an appropriate statistical technique because the dependent variable is a categorical ordinal variable for which there is a clear six ordering of activities (1, 2, 3, 4, 5, and 6). The ordered logistic regression model for our analysis is cumulative in nature. R- Software 3.03 version is used in the regression analysis,

The model for the cumulative ordered logit regression is,

$$ln\left[P(Y \leq j) / 1 - P(Y \leq j) \right] = \alpha_j + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_p x_p, \; j = 1,2,\ldots, j-1$$

Where,

$ln\ [\ P(\ Y \leq j\ )\ /\ 1-P\ (Y \leq j)\ ]$ is the conditional cumulative odds of independence in the conduct of ADL,

$x_1, x_2 \ldots\ldots\ldots x_p$ represent predictor variables and

$\beta_1, \beta_2 \ldots\ldots\ldots \beta_p$ represent the effects of parameters associated with the predictor variables,

α_j is the intercepts or threshold values also referred to as cutoffs value **(j-1)** for one parameter for each explanatory variable. These are in increasing in order $(\alpha_1 < \alpha_2 < \alpha_3 < \ldots < \alpha_{j-1})$.

The equation for our analysis is given below.

$$ln\ [\ P\ (\ Y \leq j\ )\ /\ 1-P\ (Y \leq j)\ ] = \alpha j + \beta_1 PR + \beta_2 SEX + \beta_3\ AGE_2 + \beta_4\ AGE_3 + \beta_5\ EDU_2 + \beta_6\ EDU_3 + \beta_7\ EDU_4 + \beta_8\ ECO + \beta_9\ MS + \beta_{10}\ SC + \mu_j$$

Where, μ_j is the residual term.

The frequency Table- 5.24 shows the Response profile of the equation where probabilities modelled are cumulated over the lower ordered values.

Table-5.24

Response profile

Ordered value	Independence in the conduct of daily activities	Total frequency
1	1	10
2	2	37
3	3	73
4	4	40
5	5	74
6	6	293

5.B.5.3 Results Analysis

The output of the cumulative ordered logit regression for the present study is given below. All 527 observations of the present study were used in the analysis.

In **Table-5.25** or we have observed that in our model, explanatory variables- age, place, sex, economic independency, education, marital status are statistically significant.

So, for a one unit increase in unassisted activities in daily living of the urban elderly (i.e., going from 1 to 6), we expect a 2.365 times increase in the likelihood of being on a higher level of activity of daily living on the part of the rural elderly, given all of the other variables in the model are held constant.

Similarly, for a one unit increase in unassisted activities of daily living on the part of the elderly in the age group 80 years and above, the elderly in the age group 60-69 years are 3.581 times likely to be on a higher level in the matter of carrying out such activities. For the elderly in the age group 70-79 years, the corresponding figure is 1.326.

For a one unit increase in unassisted activities of daily living on the part of illiterate elderly, the elderly with educational qualification graduate and above are less likely to be on a higher level of such activities (odds ratio being 0.895).

For a one unit increase in the unassisted activities of daily living on the part of the elderly with other than currently married status (going from 1 to 6), we can expect a 2.406 times increase on the part of the currently married elderly being on a higher level of ADL, given that all of the other variables in the model are held constant.

The elderly with social contact are 1.349 times more likely to be on a higher level of such activity as compared to the elderly without social contact.

Table- 5.25

Odds Ratios of Ordered Logit Regression for ADL of the Elderly

Parameter	Effect	Estimated co-efficient/ values	Standard Error	Odds ratio	p-value
Place	**Place** Urban (*ref)* Rural	 4.8563	 0.5613	 2.365	 *0.0001.****
Sex	**Sex** Female (*ref)* Male	 2.3784	 0.2745	 1.093	 *0.0001.****
Age_2 **Age_3**	**Age** 80 +years (r*ef*) 60-69 years 70-79 years	 3.*0194* *4.1503*	 0.2807 0.3841	 3.581 *1.326*	 *0.0001**** *0.0411***
$Education_2$ **$Education_3$** **$Education_4$**	**Education** Illiteracy (*ref*) Primary/middle Up to HSLC/HS Graduate & above	 2.7929 0.5309 -2.1298	 0.6276 0.4601 0.3201	 1.700 2.342 0.895	 *0.5057* *0.3499* *0.0001****
	Economic Independency No' (*ref*) 'Yes	 0.5802	 0.2902	 1.586	 *0.4593*
Marital status	**Marital status** Others (*ref)* Currently married	 2.3022	 0.2869	 2.406	 *0.0001****
Social contact	**Social contact** No' (*ref)* ''yes'	 1.9385	 0.3769	 1.349	 *0.0001****
Intercept	1	- 4.2769	1.1911	--	-
Intercept	2	-1.2935	0.9797	--	-
Intercept	3	0.5267	0.9153	--	-
Intercept	4	1.3395	8907	--	-
Intercept	5	2.6963	0.8546	--	-
Score test for proportional test assumption:					

Note: (ref) denotes reference category.
****Indicates significant at 1% i.e. p < 0.01.*
*** Indicates significant at 5% i.e. p < 0.05.*

5.2 Conclusion

It can be concluded that biological ageing is associated with physical disabilities and health problems. Apart from common health problems like fever, headache, having no energy etc elderly were also found to have multiple health problems. Government hospital was observed to be the main source for the treatment of the elderly, especially in the rural areas. Need for proper medical assistance was observed to be high amongst the elderly respondents. Health conditions of the elderly those who were engaged in gainful employment were found to have better health condition. The order logit regression analysis of functional status of elderly showed that male elderly were having better ADL compared to the female elderly. Rural elderly were found have better ADL status compared to their urban counterparts. Other socio-economic variables like, marital status and social contact was also found to be closely associated with the ADL of the elderly.

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CHAPTER- 6

Awareness on Legal Provisions & Social Security Measures with Some Issues of Unmet Need of the Elderly

6.1 Introduction

The definition of the social security is given by the International Labour Organization (ILO) as 'the protection which society provides for its members, through a series of public measures to prevent the social and economic distress that would otherwise be caused by the stoppage or substantial reduction in earnings resulting from sickness, maternity, employment injury, unemployment, invalidity, old age and death; the provision of medical care and the provision of subsidies for families with children' (ILO, 1942).

Another important definition of social security forwarded by Sir William Beveridge (1943), who is widely accepted as the father of the United Kingdom's social security system is 'security of an income to take place of the earnings interrupted by unemployment, sickness or accident, to provide for retirement benefit, to provide against the loss of support by the death of either person and to meet exceptional expenditure such as those connected with birth, death and marriage.'

In other words, it refers to the institutionalized programmes or schemes which provide support to people during periods of retirement, disability unemployment and illness

etc. So, the term social security is used in the economic sense of security and some facilities that the society can provide to people belonging to some vulnerable groups.

In developed countries, the elderly are covered by an elaborate system of social security. The problems of the elderly in developing countries is vastly different due to factors such as poverty, unemployment and underemployment as well as the existence of a large informal sector from the developed countries. Many researchers have, therefore, argued for the need to adopt a more comprehensive social security programmes for LDCs (Kabeer, 2002; Barrientos & Shepherd, 2003) as they felt that the type of social security programmes implemented in developed industrialised countries are generally neither appropriate nor economically viable in poor countries.

6.2 Need of Social Security for the Elderly: Magnitude of the Problem

Generally, the elderly become vulnerable due to their poor economic condition and as well as their deteriorating physical condition. Vulnerability due to increase in age, to some extent can be minimized by making specific arrangement if the income is sufficient for the elderly. Generally, the economic and other needs of the elderly are taken care of in traditional agricultural societies and in the joint family system. A high percentage of population lives below the poverty line, work in the informal sector, have inadequate earnings and savings.

Another important feature of the ageing process is the increase in the female elderly due to faster increase in life expectancy among female as compared to male counterparts, as mentioned above. Due to the increased longevity of women, at higher ages they become more vulnerable due to a number of physical afflictions in addition to

widowhood. The percentage of the elderly Indian women, who are widowed, increases from 44.5 per cent in the age group 60-64 years to 86.8 for women aged 80 and older. In contrast, one in ten men in the age group of 60- 64 years and one-third of men above 80 are widowers (UNFPA, 2012). As women are at a disadvantage in terms of ownership of assets, lower work participation and lower wages, they are more likely to be at the mercy of the male family members; and more so once they are widowed.

Majority of the elderly will continue to rely on their children and family members for old age security. The same trend has also been observed in the present study. When people and families are not able to make arrangements for the care of the elderly, their needs must be provided for by state or society through social assistance schemes.

6.3 A forward move to Constitutional Provision & Social Assistance Programme

The Central government has been taking up welfare programmes for the elderly. Many state governments took initiatives to have legislations passed for providing security to the elderly and increased the grants for providing pensions to the aged. Assam government is no exception to it to implement the central government schemes to the most vulnerable section of the society.

Some of the constitutional and legal provisions and social assistance schemes of the government for the elderly are briefly discussed below.

6.3.1 Constitutional provision for Protection & Welfare of the Elderly

Constitution of India, entry 24 in list III of schedule VII deals with the “Welfare of Labour, including conditions of work, provident funds, liability for workmen’s compensation,

invalidity and **old age pension** and maternity benefits. Further, Item No. 9 of the State List and item 20, 23 and 24 of Concurrent List relates to old age pension, social security and social insurance, and economic and social planning. Article 41 of Directive Principles of State Policy has particular relevance to Old Age Social Security. According to this Article, "the State shall, within the limits of its economic capacity and development, make effective provision for securing the right to work, to education and to public assistance in case of unemployment, old age, sickness and disablement and in other cases of undeserved want"(The Constitution of India).

6.3.2 Legal provisions

Some of the legal provisions for the elderly have been discussed below.

Code of Criminal Procedure, 1973

Section 125(1) (2) makes it incumbent for a person having sufficient means to maintain his father or mother who, is unable to maintain himself or herself and on getting proof of neglect or refusal, may be ordered by a first class magistrate to make a monthly allowance not exceeding Rs.500/-. It is applicable to all, irrespective of their religious faith and religious persuasions, and includes adoptive parents. This section has been interpreted by the Supreme Court in its ruling so as to make daughters and sons, married or unmarried, equally responsible to maintain their parents.

Hindu Adoption and Maintenance Act, 1956

The right of parents without any means to be supported by their children having sufficient means has been recognised by section 125 (1) (d) of the Code of Criminal

Procedure 1973, and Section 20(3) of the Hindu Adoption and Maintenance Act, 1956. This act gives a statutory recognition to the well established normal obligation of a Hindu child (male or female) to maintain his aged or infirm parents, as long as they are not able to maintain themselves.

Maintenance and Welfare of Parents and Senior Citizens Act, 2007

The Maintenance and Welfare of Parents and Senior Citizens Act, 2007 was enacted on 31st December 2007, to ensure need based maintenance for parents and senior citizens and their welfare. It accords prime responsibility for the maintenance of parents on their children, grandchildren or even relatives who may possibly inherit the property of a senior citizen. It also calls upon the state to provide facilities for poor and destitute older persons. The Act has to be brought into force by individual State Government. Himachal Pradesh is the first state where old parents can legally stake claim to financial aid from their grown-up children for their survival and a denial would invite a prison term. As on 03.02.2010, the Act had been notified by 22 states including Assam and all Union Territories.

6.3.3 Social Policy, Programmes for the Elderly

The National Policy on Older Persons (NPOP) was announced in January1999 to reaffirm the commitment to ensure the well-being of the older persons. The Policy envisages State support to ensure financial and food security, health care, shelter and other needs of older persons, equitable share in development, protection against abuse and exploitation, and availability of services to improve the quality of their lives.

National Council for Older Persons (NCOP)

A National Council for Older Persons (NCOP) was constituted in1999 under the chairpersonship of the Ministry of Social Justice and Empowerment to operationalize the National Policy on Older Persons. The NCOP is the highest body to advise the Government in the formulation and implementation of policy and programmes for the elderly.

Central Sector Scheme of Integrated Programme for Older Persons (IPOP)

An integrated Programme for Older Persons (IPOP) is being implemented since 1992 with the objective of improving the quality of life of senior citizens by providing basic amenities like food, shelter, medical care and entertainment opportunities and by encouraging productive and active ageing. Under this scheme financial assistance up to 90 percent of the project cost is provided to Non-Governmental Organizations for running and maintenance of old age homes, daycare centers and mobile medicine units. The scheme has been made flexible so as to meet the diverse needs of the older persons including reinforcement and strengthening of the family, awareness generation on issues pertaining to older persons, popularisation of the concept of life- long preparation for old age etc.

6.3.4 Old Age Benefit Schemes :

Indira Gandhi National Old Age Pension (IGNOAP)

The National Old Age Pension (NOAP) Scheme was started in 1994. The amount of old age pension varies in different States as per their share to this scheme. It is implemented in the State and Union Territories through Panchayats and Municipalities.

The same programme has been renamed as Indira Gandhi National Old Age Pension Scheme (IGNOAPS) in 2007.

Under this scheme, central assistance in form of pension is given Rs. 200/- per month to persons, aged above 60 years, belonging to a below poverty line family. This pension amount is meant to be supplemented by at least same contribution by the States, so that each applicant gets at least Rs.400/- per month as pension. The pension amount for elderly of 80 years and above has also been increased from Rs. 200/- to Rs. 500/- per month with effect from 01.04.2011.

Indira Gandhi National Widow Pension (IGNWP)

The IGNWP Scheme is started by Ministry of Rural Development of the Central Government for providing financial help to widow women who belong to BPL category. The scheme is introduced under National Social Assistance Programme in 1995. Widow of the age 40 years or more will get Rs. 300 per month up to 79 years and above that Rs. 500 per month.

Annapurna Scheme

Launched in 2000, the scheme provides food security (10 kg. food grains per month free of cost) to senior citizens not covered under IGNOAPS. As per the National Food Security Act 2013, every person belonging to priority households shall be entitled to receive five kilograms of food grains per person per month at subsidised prices specified in Schedule-I from the State Government under the Targeted Public Distribution System. The act specifically states that “The provisions of this Act shall not preclude the Central Government or the State Government from continuing or

formulating other food based welfare schemes". It implies that this facility will not affect the continuation of existing schemes providing subsidised or free food to the poor.

National Policy on Senior Citizens 2011

The policy believes in the development of a formal and informal social support system, so that the capacity of the family to take care of senior citizens is strengthened and they continue to live in the family. This policy advocates issues related to senior citizens living in urban and rural areas, special needs of the 'oldest old' and older women. It will endeavour to strengthen integration between generations, facilitate interaction between the old and the young as well as strengthen bonds between different age groups.

6.4 Privileges & Benefits from Different Services:

Central Facilities/Services designed specifically for the Elderly

- In 2005, an advisory was issued by the Ministry of Home Affairs to the State governments directing police departments to pay special attention to the protection of life and property of the senior citizens, to keep a friendly vigil, to sensitize the police force about the security concerns of the elderly and to formulate action plans for setting up help lines, home visits, mandatory review of old persons' cases by senior police officials, etc.
- Concessions given by the Finance Ministry, Government of India: Income tax exemption for the senior citizens Savings: Banks /Postal schemes for senior Citizens that offered higher interest rates such as Senior Citizens' Saving Scheme for ages 60 and Monthly Income Scheme for people of 60 years or older.

- Travel facilities: Indian Railways and domestic airlines offer concession in railway ticket rates and air fare for the elderly.

6.5 Awareness amongst the Elderly Respondents Regarding Legal Provisions, Different Pension Schemes & Concessions on Different Services

Awareness on different legal provisions for the protection of the elderly in our present study, shows that 18.4 percentage having knowledge at least in one out of the three legal provisions (**Table – 6.1).**

Table-6.1

Percentage Distribution of the Elderly on the awareness regarding legal provision/schemes for old age pension/concession benefit: Rural-Urban

(figures in parenthesis show percentages)

Awareness	Rural	Urban	Total
Legal Provisions			
Code Of Criminal Procedure, 1973	2 (0.7)	22 (9.4)	24 (4.6)
Hindu Adoption & Maintenance Act, 1956	4 (1.4)	48 (20.5)	52 (9.9)
Maintenance & Welfare of Parents & senior Citizen Act,	08 (2.7))	69 (29.5)	77 (14.6)
At least one Act	10 (3.4)	87 (37.2)	97 (18.4)
Schemes For Old Age Persons			
IGNOP	103 (35.2)	68 (29.1)	171 (32.4)
IGNWP	98 (33.4)	44 (18.8)	142 (26.9)
Annapurna Scheme	31 (10.6)	9 (3.8)	40 (7.6)
At least one Scheme	113(38.6)	77 (32.9)	190 (36.1)
Concession On Various Service For The Elderly			
Railway travels	27 (9.2)	98 (41.9)	125 (23.7)
Air travels	3 (1.03)	75 (32.1)	78 (14.8)
Health Insurance/ LIC	30(10.2)	105 (44.9)	135 (25.6)
Exemption from Income Tax	20 (6.8)	122 (52.1)	142 (26.9)
Concession on Bank & Postal Savings	35(12.0)	155(66.2	190 (36.1)
At least one service	41(14.0)	168 (71.8)	209 (39.7)

Source: Field survey data (2015-16)

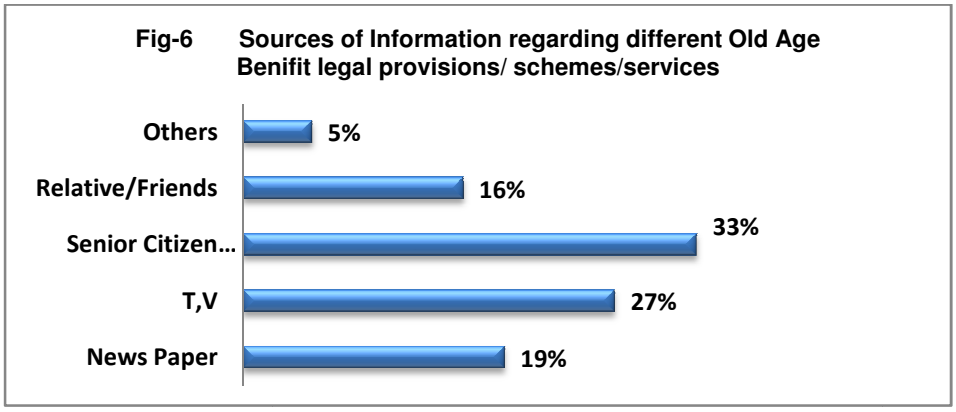
Though the overall knowledge of the elderly of the present study on legal provisions was found to be significantly low, but the awareness of the urban elderly in this regard was observed to be more in comparison to their rural counterparts. The reason may be, due to the fact that, the proportion of the educated elderly was found to be relatively higher in the urban areas than the rural areas of the present study. Out of the three legal provisions, majority of the respondents (14.6 per cent) were observed to have the knowledge in the 'Maintenance & Welfare of Parents & senior Citizen Act, 2007'. It was found to be 29.5 percent and 2.7 percent in the urban and the rural areas respectively.

Similarly, so far the old age benefit schemes are concerned, out of 527 respondents, 36.5 percent were found to be aware on at least one of the three schemes discussed above. Majority of the respondents were observed to be aware on regarding the IGNOP scheme (32.4 percent). Rural respondents were observed to be found having more knowledge in all of the three schemes compared to the urban elderly. A significant difference is revealed from the above analysis is that among all the three schemes, respondents were found having poor level of knowledge regarding the Annapurna Scheme (7.6 percent).

So far knowledge of the respondents on concessions in different services provided for the elderly is concerned, we have included only the most common services like- railway travel, air travel, health insurance /LIC, exemption of income tax, savings schemes of post office and bank for our analysis. More than one third of the respondents (36.1 percent) were found having awareness on the concessions given in the savings of the post office and the bank's deposits and other interest accrued schemes. Respondents having knowledge at least in one service was found to be 39.7 percent. It is also

observed that respondents from the urban area were found to have more knowledge regarding the concessions in the above mentioned services (71.8 per cent). More than half of the urban elderly was aware of the exemption in income tax and the concessions on the savings schemes of the post office and the bank.

6.6 Source of Awareness or Knowledge of the Elderly Regarding Legal Provisions, Different Pension Schemes & Concessions on Different Services



Source: field survey data (2015-16)

The different sources for the awareness or the acquiring of the knowledge on different programmes of the social care and support of the elderly were found to be newspaper, TV, friends/relatives, senior citizen associations / NGOs and others (meeting/seminar). In the present study, senior citizen association /NGO was found to be the main source (33 percent) of the awareness regarding different welfare schemes of the elderly respondents followed by TV, newspaper. This is shown in the **Fig- 6.**

6.7 Coverage/Utilization of the Schemes and Services in the Study Area: Rural-Urban

Utilization of old age benefit schemes is considered as more important than the awareness of the schemes. The elderly below poverty line (BPL) were the beneficiaries

of the schemes. The elderly in the BPL category of the present study were 32.3 per cent (**Table-2.11a in chapter-2)**. The proportion of the elderly BPL was found to be comparatively higher (77.6 per cent) in the rural area (**Table-6.2)**. The percentage distribution of the elderly BPL covered under the different old age benefit schemes has been shown in **Table-6.3** below.

Table-6.2

Percentage distribution of the Elderly BPL: Rural-Urban

(figures in parenthesis show percentages)

Elderly BPL	Rural	Urban	Total
	132 (77.6)	38 (22.4)	170 (100.0)

Source: field survey data (20015-16)

Table-6.3

Percentage Distribution of the elderly BPL by Old Age Schemes: Rural-Urban

(figures in parenthesis show percentages)

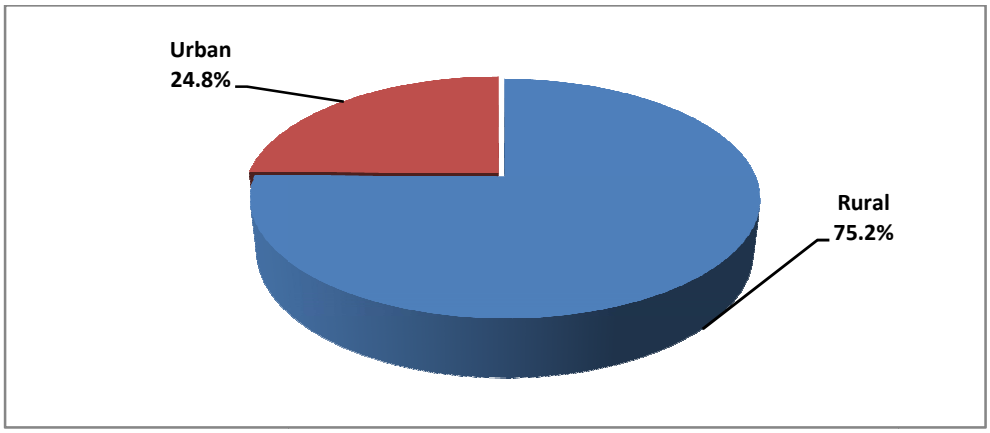
Place	Covered	Uncovered	Total
Rural	82 (62.1)	50 (37.9)	132 (100.0)
Urban	27 (71.1)	11 (28.9)	38 (100.0)
Total	**109 (64.1)**	**61 (35.9)**	**170 (100.0)**

Source: Field survey data, (20015-16)

The target group of the old age benefit schemes is meant only for BPL elderly. In our present study, the total respondent of the elderly in this category is 170 (**Table -2.11.a**) .More than three fifth elderly was covered under the IGNOAP, IGNWP and ANNAPURNA schemes. The proportion of the elderly in the rural area availed the various benefit schemes was found to be 62.1 percent and in the urban area, it was

found to be 71.1 percent. On the whole, the coverage of the rural BPL elderly under such schemes was found to be 75.2 percent while, it was 24.8 per cent in urban BPL elderly (**Fig-7)**

Fig:7 Percentage share of coverage of BPL Elderly under Old Age Beneficiary Schemes: Rural -Urban



Source: Field survey data, (20015-16)

Table-6.4

Percentage Distribution of BPL Elderly Covered by various Schemes

(figures in parenthesis show percentages)

Schemes	Rural	Urban	Total
IGNOAP	42 (51.2)	14 (51.9)	56(51.4)
IGNWP	31 (37.8)	11 (40.7)	42(38.5)
ANNAPURNA	9 (11.0)	2 (7.4)	11(10.1)
Total	82 (100.0)	27 (100.0)	109(100)

Source: Field survey data, (20015-16)

Table-6.4 shows a scheme wise coverage of the BPL elderly. Out of the total of 109 BPL Elderly (covered under different schemes), more than half of the elderly were

covered under the scheme of IGNOAP and followed by IGNWP (38.5 percent) and Annapurna (10.1 percent). In the urban area, the coverage of the widow elderly under the IGNWP scheme was relatively found higher than that of the rural area.

6.8 Utilization of Concessions on Different Services: Rural-Urban

T**able- 6.5** depicts the utilization of the concession given on different services /schemes by the elderly respondents of the present study. Nearly one third of the elderly of the present study utilized at least one service. This figure was found to be more in urban

Table-6.5
Utilization of concessions on services related to old age benefit schemes :Rural-Urban
(figures in parenthesis show percentages)

	Rural=293	Urban=234	Total=527
Railway travels	19 (6.5)	53(22.6)	72 (13.7)
Air travels	02(0.7))	45(19.23)	47 (8.9
Health Insurance/ LIC	22 (7.5)	87 (37.2)	109(20.7)
Exemption from Income Tax	7 (2.4)	87 (36.3)	94 (17.8)
Concession on Bank & Postal Savings	21 (7.2)	120 (51.3)	141(27.8)
At least one service	25 (8.5)	136(58.1)	161(31.7)

Source: Field survey data, (20015-16)

area (58.1 percent) compared to the rural area. The highest utilization of the benefits from the services was observed in the deposit schemes of the post office/banks by the elderly. It was found to be 27.8 percent followed by health insurance /LIC service concessions (20.7 percent), exemption from income tax (17.8 per cent), and railways travels (13.7 per cent).

A significant difference is observed form the **Table-6.5** is that the urban elderly utilized the service benefits more which are meant especially for the old persons in comparison to the rural elderly persons. More than half of the urban elderly availed the concession benefits from the savings schemes of the post office as well as from the banks.

6.9 Unmet Needs of the Elderly Respondents

The awareness on different old age benefit schemes or any other provisions for the social support system of the elderly people is considered as one of the most important means of accessibility to such provisions. Though the accessibility to such provisions depends on many other factors such as political will, proper policy framing etc, yet awareness or the knowledge of the elderly plays a pivotal role in utilizing such schemes for the welfare of the elderly. Higher the level of awareness of the elderly, the higher is the accessibility of the elderly to these schemes. This helps to meet the need of the old age care and support of the elderly. In the absence of the co-ordination of the three above mentioned forces (awareness or knowledge, accessibility and utilization), unmet needs for the social support amongst the elderly will be widened.

Unmet need generally refers to the concept that there is need which is not met. It is very crucial in assessing the effectiveness of the care and social support provision.

From the above discussion of the old age pension schemes and the other governmental social security measures which are meant only for the BPL elderly, it is found that larger proportion of the BPL elderly remained uncovered **(Table-6.3)** under the old age welfare schemes .This indicates 35.9 percent needs of the BPL elderly remained unmet . The unmet need in the rural area was found to be higher (37.9) than

the urban area (27.9). Hence, they were being excluded from enjoying such beneficiary schemes. This signifies the magnitude of the vulnerability of the elderly in the present study area.

6.10 Conclusion

Thus, on the basis of the above findings of the present study, it can be concluded that the poor awareness or knowledge on legal provisions and old age beneficiary schemes, the elderly of the present study area, were exposed to old age vulnerability. This satisfies one of the research questions of the present study that is “whether the elderly are aware of the prevalent legal provisions which are for the protection of the benefit of the elderly”.

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Chapter-7

Female elderly: Issues and concerns

7.1 Introduction

Feminization of ageing is one of the most significant phenomenon of the twenty-first century and it is currently dominant in most of the developed countries in the world. However, in recent years it has picked up its pace in developing countries too. Besides the substantial growth of overall elderly population, the trend in the sex ratio of the elderly i.e., 60 years and above has been showing a strong preponderance of women in the old age. Globally, women on average outlive men by 4.5 years during the period 2010-2015 (UN Report, 2015). In 2015, women constituted 54 percent of the global population aged 60 years and above and 61 percent of those aged 80 years and above. According to the UN projection, this sex balance of the older population at the global level will remain relatively unchanged in the coming decades.

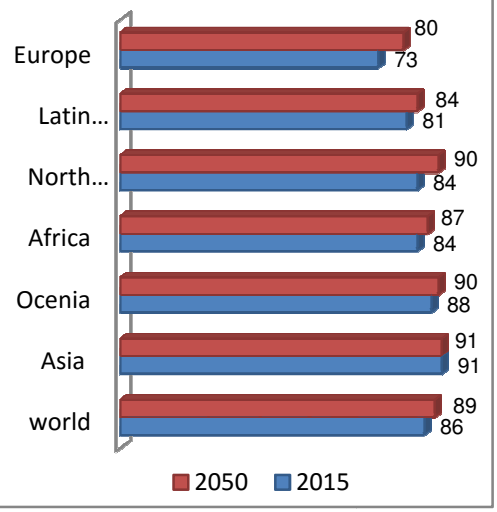
The worldwide sex ratio in 1995 was reported as 807 males per 1000 females and it is expected to be 844 by 2020 (UNFPA Report, 1999). Sex ratio for the developed countries was reported considerably low i.e., 684 males per 1000 females in 1970 and has been projected to be 761 by 2020. On the other hand sex ratio in the developing countries was recorded as 893 males per 1000 females and has been projected to fall further to 883 by 2020.

The sex ratio of the elderly population at the global level, was estimated at 86 men for every 100 women aged 60 years and above and 63 men for every 100 women aged 80

years and above in 2015 (UN, 2015). These sex ratios of the elderly are expected to rise to 89 and 73 respectively, in 2050. This phenomenon of increasing proportion of female elderly compared to the male elderly with respect to the increase in the age is called feminization of ageing.

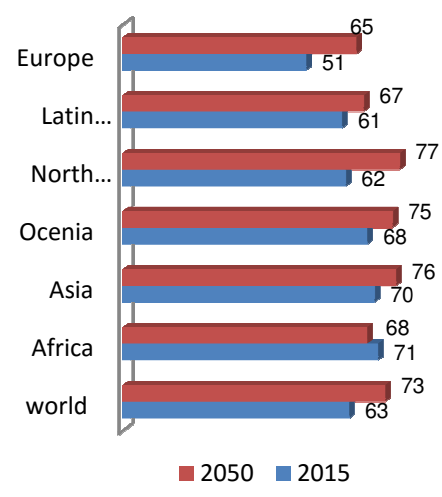
Sex ratios of the elderly population for the world and some regions (**Fig: 8.a and Fig: 8.b**) show that number of men for every 100 women decreases as we move from young old age group (i.e., 60 years and above) to oldest old age group (i.e., 80 years and above) in 2015. The projected sex ratios of the elderly for the world and regions in 2050 also show the same trend.

Fig: 8.a Sex ratio of elderly aged 60+ : World & Region, 2015 & 2050 (Men per 100 women)



Source: UN Ageing Report, 2015

Fig: 8.b Sex ratio of elderly aged 80+ : World & Regions, 2015 & 2050 (Men per 100 women)



Source: UN Ageing Report, 2015

7.1.1 Feminization of Ageing in India

India has already stepped into the arena of feminization of ageing and it is reflected by the Census, 2001 data. In 2001, the proportion of female elderly (7.8 per cent) is larger

than the proportion of male elderly (7.1 per cent). The decadal growth rate of female elderly (42.2 per cent) has exceeded the decadal growth rate of male elderly (28.6 per cent). According to the Census Report, 2011, the overall sex ratio in India is favourable to male population (940 females per 1000 males). But the sex ratio for the elderly population at 60 years and above, favours elderly women (1022 female per 1000 male). Moreover, the proportion of older women is observed to increase remarkably in upper age groups.

Table-7.1

Trends in life expectancy gender gap at ages 60 and 80 in India, 1950-2055 (in percentage)

	Male life Expectancy, Age 60	Female life Expectancy, Age 60	Difference, Age 60	Male life Expectancy, Age 80	Female life Expectancy, age 80	Difference, age 80
1950-1955	11.7	12.4	-0.7	4.2	5.2	-1.0
1980-1985	14.1	15.5	-1.4	5.3	6.2	-0.9
2010-2015	17.0	18.4	-1.4	6.8	7.2	-0.4
2030-2035	18.5	20.1	-1.6	7.5	7.9	-0.4
2050-2055	20.4	22.4	-2.0	8.0	8.9	-0.9

Source: Agarwal . PGDA Working paper No. 132, p-10. 2016

Globally, in most of the countries, women's life expectancy at birth has long exceeded men's. But, in India the life expectancy gender gap is wide and it is expected to increase in the years to come (UN Report, 2015). **Table-7.1** shows the trends in differences of male and female life expectation at ages 60 and 80 in India as depicted by the UN Report 2015. The growing longevity gap between the male and female elderly of ages 60 and 80 implies feminization of India's population at upper age segments. The life expectancy of the female in India at age 60 exceeded male's by 0.07 years in 1950-1955. The gap had increased in 2010-2015 by two times and by 2050-2055, it has been

projected to increase by 2 years. The male-female gap in the life expectancy at age 80, though has been observed to decrease between the period 1950-55 to 2010-15, yet it has been expected to increase by 2050.

Table- 7.2

Gender gap in life expectancy at age 60 in some selected populous states in India. (in percentage)

State	Male	Female	Difference
Rajashan	16.9	21.0	-4.1
Kerala	18.0	21.6	-3.6
Jammu and Kashmir	19.1	22.3	-3.2
Haryana	17.6	20.5	-2.9
Gujat	17.1	19.8	-2.7
Assam	15.4	17.9	-2.5
Andhra Pradesh	16.8	19.2	-2.4
Madhya Pradesh	15.4	17.6	-2.2
Himachal Pradesh	18.3	21.0	-2.7
Karnata	16.8	19.0	-2.2
Uttar Pradesh	15.8	18.0	-2.2
West Bengal	16.9	18.7	-1.8
Punjab	19.3	21.0	-1.7
Tamil Nadu	17.2	18.9	-1.7
Maharastra	17.9	19.5	-1.6
Odisha	16.8	17.6	-0.8
Bihar	17.0	17.5	-0.5
India	**17.0**	**18.4**	**-1.4**

Source: Census 2011

The trend of feminization has not been homogeneous across the Indian states. **Table-7.2** below exhibits the differences in years of expectation of life at age 60 in some selected populous states in India. The difference in male-female life expectancy at age 60 has been found to vary from a half year gap in Bihar to more than four years gap in Rajasthan. The gap in Assam is found to be two and half years. This implies that different states will have different gender profiles in their elder population in the years to come.

Thus, feminization of elder segment of population has raised several socio-economic issues associated with ageing which needs immediate attention to frame policy and programmes.

Moreover, men and women have different experience and problems. Biological differences, the assigned gender roles and position have placed men and women in different position in the society at large. Women in India, comparatively being the disadvantageous group, both socially and economically, are badly exposed to the old age vulnerability. Most common problems faced by the women elderly relate to widowhood, poverty, dearth of access to income and resources, education health and old age support (Davidson, Digiacomo, and McGrath J., 2011).

Table – 7.3

Gender differentials of elderly by socio-economic variables: India & Assam

Selected variables	India			Assam		
	Male	Female	Gap	Male	Female	Gap
Life expectancy at age 60 (in years), (Census,2011)	17.0	18.4	**-1.4**	15.4	17.9	**-2.5**
Literacy rate (%), (Census,2011)	63.2	30.8	**32.4**	59.1	28.5	**30.6**
Marital status by widowed/unmarried elderly (%) *(NSS, 60th round, Jan'-June,2004)*	20.55	61.05	**- 40.5**	19.7	69.22	**- 49.5**
Dependency status of elderly (%), *(NSSO 60th round)*	45.2	60.6	**-15.4**	49.3	66.0	**-16.7**
Work participation (60-79 years),(NSSO, 2004)	53.1	14.6	**38.5**	57.78	4.59	**53.13**
Work participation (80 years and above),(NSSO, 2004)	15.28	2.43	**12.8**	33.56	0. 0	**33.41**
Percentage of reported illness by elderly (%) *(NSSO 60th round)*	31.0	31.0	**0.0**	38.0	41.0	**-3.0**

Source: Government of India, 2013 (National average) and Government of India, 2015 for state estimates.(The difference is computed by the researcher).

Table-7.3 exhibits comparatively a higher gender gap in respect of life expectancy of elderly in Assam (-2.5 years) than the national average (-1.4 years). Though at present

the elderly female has yet not outnumbered the male elderly in absolute numbers (Census, 2011) but in near future, they are expected to outnumber their male counterparts.

An interesting finding of Census, 2011, is that Assam is having more literate elderly (47.3 percent) in comparison to India as a whole (43.5 percent). But the state shows a higher gender disparity (32.4 percent) compared to the national average (30.6). Low literacy rate of the elderly in general along with a wide gender gap in literacy have been identified as one of the major factors responsible for lack of awareness and consciousness of health and other related issues of the old age.

Loss of spouse at the later age is indeed considered to be a common problem amongst the Indian elderly, particularly the female elderly. Life without spouse at old age becomes stressful and insecure. This causes dependency and insecurity in their lives. Unmarried, separated and widows have identical position in the society and hence, face more or less the similar vulnerabilities. In **Table-7.3** it is observed that the incidence of loss of spouses is more on the female elderly compared to the male elderly both at state and the national level. However, the state average in this respect was found to be higher than that of the national average. Consequently, the gender differences in respect of unmarried separated and loss of spouses was higher at the state level (- 49.5 per cent) than the national average (- 40.5 per cent). Two reasons are given for the marked gender disparities in loss of spouses in India firstly, longer life span of women compared to that of men and secondly, the general tendency in India for women to marry men older than themselves (Gulati and Rajan, 1991). Widowers are also much more likely to remarry and thus restore their earlier status.

Another dimension of increasing number of elderly is the increase in old age dependency ratio. A study carried out by S. Irudya Rajan, U.S Mishra, and P. Sankara Sarma, (1999.) stated that an increasing trend of the old age dependency ratio both at national and the state level (Assam) accompanied with a decreasing trend of young dependency ratio resulted in an increment in the supporting cost of the society. This ultimately has a negative impact on the life of the elderly. Dependency indicates a stressful life for the elderly in general and female elderly in particular. Significant gender gaps regarding the dependency ratio of the elderly (**Table– 7.3**) both at the national and state level indicate the higher percentage of economic dependency amongst women elderly.

More than fifty per cent participation of the elderly in the labour market both at all India and state level (i.e., the percentage of economically active elderly in **Table-7.3**) does not necessarily mean economic wellbeing of the elderly rather it implies their deteriorating economic situation and inadequate structure of the society. Sometimes work participation is made under compulsion i.e., to support oneself or one self's families. A male-female break up data shows that there is a significant gender gap in work participation both in Assam and India. However, the gap is observed to be more in case of Assam. This is because female participation in labour force in Assam in general is well below the national average (Census, 2011).

The percentages of productive contribution by the elderly at both national and state level show wide gender gaps. At the age of 60-79 the participation in gainful employment in case of male elderly was high (53.1 per cent) at national level and at state level (57.78 per cent) but, it was considerably low in case of female elderly i.e., 4.59 per cent in Assam and 14.6 per cent in India. There was a significant fall in the

work participation by both male and female elderly in higher age category i.e., age 80 and above. At all India level, the fall in case of male, was from 53.1 percent to15.28 per cent while, in case of women, it fell down from 14.6 per cent to 2.43 percent. In case of Assam, the figure for male elderly decreased from 57.78 per cent to 33.56 per cent while, for female elderly it fell down from 4.59 per cent to zero. The gender gap in respect of illness reported by the elderly was observed in Assam (-3.0), implying women elderly were more vulnerable to old age illness.

7.3 Gender Differentials: Elderly Population in Undivided Kamrup District

In the present study out of 527 elderly 296 (56.2 per cent) are female elderly and 231 (43.8 per cent) were male elderly. Gender differential in respect of numbers of elderly was found to be comparatively higher in the rural area of the selected district. The dimensions of gender gap of the elderly respondents in the present study can be analysed with some selected socio-economic and demographic background variables.

7.3.1 Gender Differentials of the Elderly Respondents: Age

Table – 7.4
Percentage of the Elderly by broad age groups: sex and place
(figures in parenthesis show percentages)

Age group	Place of Residence	Male	Female	Difference (%)
60-69 years	**Rural**	89 (46.9)	101 (53.1)	**-6.2**
	Urban(N=119)	60 (50.4)	59 (49.6)	**-0.8**
	Total	**149 (48.2)**	**160 (51.8)**	**-3.6**
70-79 years	**Rural** (N=75)	23 (30.7)	52 (69.3)	**-38.6**
	Urban (N=77)	33 (42.9)	44 (57.1)	**-14.2**
	Total (N=152)	**56 (36.8)**	**96 (63.1)**	**-26.3**
80 years & above	**Rural** (N=28)	9 (32.1)	19 (67.9)	**-35.8**
	Urban (N=38)	17 (44.8)	21 (55.2)	**-10.4**
	Total (N=66)	**26 (39.4)**	**40 (60.6)**	**-21.2**
Mean age	**Rural**	**67.5 yrs**	**69.2 yrs**	**-1.7 yrs**
	Urban	**69.8 yrs**	**70.7 yrs**	**-0.9 yrs**

Source: Field survey data, 2015-16

In the field study area, an excess of females has been observed in all the age categories of elderly except the age group 60-69 years in the urban areas (**Table- 7**.4) Moreover, it is found to increase with the increase in age of the elderly. The gender gap in numbers of elderly was observed to be more pronounced in the rural area compared to the urban area.

7.3.2 Gender Differentials of the Elderly Respondents Education

Gender gap in literacy puts women in a disadvantageous position in various ways in their socio-economic lives, such as, access to ownership, management of property and financial assets, living arrangement and health. In case of elderly persons it is found to be more in magnitude. In the field study area, the gender gap regarding the level of educational attainment amongst the male and female elderly is shown in **Table-7.5.** It is observed that the percentage of illiteracy was higher amongst the female elderly and the

Table- 7.5

Percentage of the Elderly with educational qualification: Male-Female

(figures in parenthesis show percentages)

Educational level	Total	Male	Female	Gender gap
Illiterate	121 (100.0)	50 (41.3)	71 (58.7)	**-17.4**
Educated up to primary level	93(100.0)	33 (35.5)	60 (64.51)	**-29.0**
Educated up to HSLC level	139 (100.0)	56 (40.3)	83 (59.7)	**-19.4**
Passed HSLC/HS	90 (100.0)	25 (27.8)	65 (72.2)	**- 44.4**
Passed Graduate& above	84 (100.0)	67 (79.8)	17 (20.2)	**59.6**

Source: Field survey data, 2015-16

more than 17 per cent. At the level of education below HSLC/HS the gap is observed to be favourable to the women elderly (i.e., -19.4 per cent) but, at the higher level of

education the gap has been observed to unfavorable to women and it is significantly high (i.e., more than 59 .6 per cent).

7.3.3 Gender Differentials of the Elderly Respondents: Marital Status

Marital status is closely related to the well-being of a person. Generally, the elderly living with spouse (currently married) are found to be much better off in the later years of life. Marital status in this respect acts as a mental support and health security for the elderly couples and hence plays a vital role in determining the quality of life (World Bank, 1994).

Widowhood is a major challenge to the old age. Since woman outlives man in ageing population (aged 60 years and above), they are mostly exposed to the vulnerably of widow-hood in their older age (Pandey and Jha, 2011).

Table- 7.6

Percentage of widowed elderly aged 60 years and above in some selected major states

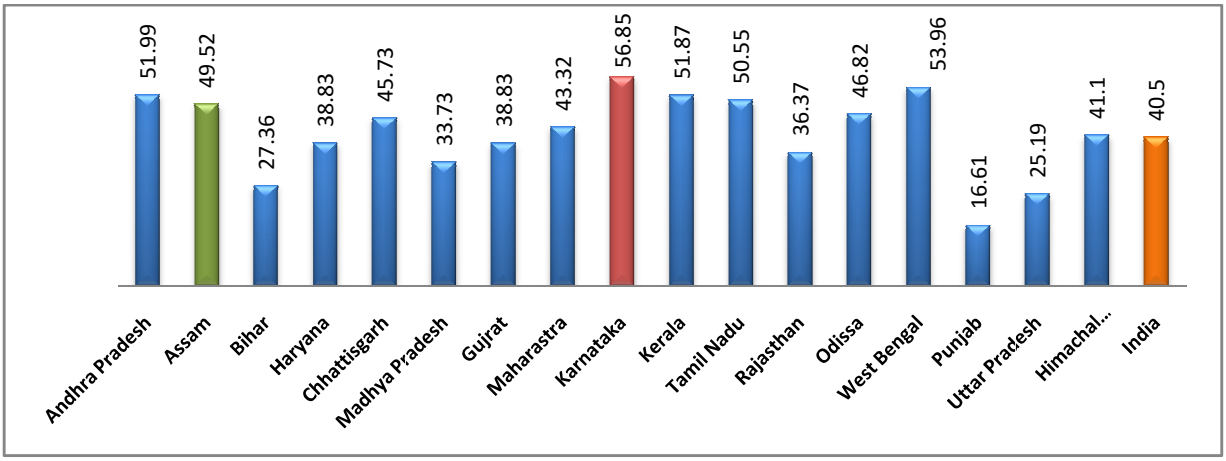
States	Male	Female	Difference
Andhra Pradesh	18.55	70.54	-51.99
Assam	19.70	69.22	-49.52
Bihar	21.84	49.20	-27.36
Haryana	22.79	61.62	-38.83
Chhattisgarh	18.59	64.32	-45.73
Madhya Pradesh	22.69	56.42	-33.73
Gujrat	22.79	61.62	-38.83
Maharastra	15.65	58.91	-43.26
Karnataka	16.73	73.58	-56.85
Kerala	14.29	66.16	-51.87
Tamil Nadu	18.24	68.79	-50.55
Rajasthan	21.27	57.64	-36.37
Odissa	13.12	59.94	-46.82
West Bengal	17.31	71.27	-53.96
Punjab	21.95	46.03	-24.08
Uttar Pradesh	29.42	54.61	-25.19
Himachal Pradesh	22.27	63.37	-41.1
India	**20.55**	**61.05**	**-40.5**

Source: NSSO 60th Round, 2004.

According to NSSO 60th Round, 2004-05 (**Table-7.6**), the percentage of widow elderly compared to the widower elderly was higher across the states in India (Table- 7.6). It was found highest in Karnataka (73.58 per cent) and lowest in Punjab (46.03 per cent). At all India level, it was found to be above 61.05 per cent. The percentage of widower elderly was found highest in Uttar Pradesh (29.42per cent) and lowest in Odissa (13.12 per cent) while, at the national level it was just above 20 per cent (i.e., 20. 55 per cent). In the state of Assam the percentage of elderly without spouse for female was 69.22 per cent and for male it was 19.70 per cent.

Thus NSSO Report, 2004 showed a wide gender gap in respect to the percentage of male- female elderly without spouse across the selected major states in India (**Table-7.6**). This has been displayed in **Fig- 9** below. Karnataka was placed at the top of the table with 56.85 per cent and Punjab at the bottom with 16.61 per cent. The gender difference in respect to the percentage of elderly without spouse in the state of Assam was found 49.52 per cent which was higher than the national average (40.5 per cent).

Fig:9 Percentage Difference of Widow & Widower Elderly, India: Selected Major States



Source: NSSO 60th Round, 2004

In present field study area wide gender gap has been observed in terms of current marital status of the elderly (**Table–7.7**). The proportion of widows compared to the widowers was found to be in excess (43.1 percent).

Table-7.7

Percentage distribution of the Elderly by Marital Status : Male-Female

(figures in parenthesis show percentages)

Marital status	Male N=231	Female N=296	Difference (%)
Currently married	183 (79.2)	107 (36.1)	43.1
Unmarried	7 (3.0)	--	--
Widower/ widow	39 (16.9)	169 (57.1)	- 40.2
Divorced / separated	2 (0.9)	20 (6.8)	-5.9

Source: field survey data (2015-16)

The reason of the higher percentage of the widows in the elderly population may be because of the age gap at marriage between husband and wife. It is a known fact that by the time a women reaches to the higher age group, her husband expires. Another argument is that, there is less number of second marriages in case of women compared to their male counterpart (Rajan, 2014). Another significant finding of the present study is that, in case of divorce and separation, female elderly has also outnumbered the male elderly.

7.3.4 Gender Differentials of the Elderly Respondents: Economic Dependency

Economic dependency at old age is considered as one of the major causes of old age vulnerability. Besides daily necessity of life, there are other essential needs of old age like medical care, proper nutrition, medicines etc. Economic dependency at old age

denies all of them. Economic dependency in general is found higher amongst the women.

According to NSSO Report, 2004, full economic dependency for female elderly was high (more than 75 percent) in states like West Bengal, Uttar Pradesh, Odisha, Gujrat, Rajasthan and Jammu & Kashmir etc. while, the ratio for male was found below 35 per cent in almost all the states. In Kerala however the gender gap in full economic dependency ratio for the elderly was comparatively narrow: for female it was 67 per cent and for male 39 per cent. In Assam the ratio shows a wide gender gap: for female it was 75.5 per cent and for male 28.5 per cent.

Table-7.8

Percentage distribution of the Elderly by Economic Dependency: Male-Female

(figures in parenthesis show percentages)

	Total (N=527)	Male (N=231)	Female (N=296)	Difference (%)
Independent	244 (46.3)	146 (63.2)	98 (33.1)	30.1
Partially dependent	113 (21.4)	64 (27.7)	49 (16.5)	11.2
Fully dependent	170 (32.3)	21 (9.1)	149 0.3)	-41.2

Source: Field survey data, (2015-16)

In the present study, compared to women, 30.1 percent more male were observed to be economically independent (**Table-7.8**). On the contrary, 41.2 per cent more female compared to male were observed to be economically fully dependent. Partial dependency was found to be higher amongst the elderly males. A high dependency ratio implies a stressful life of the elderly in general and women in particular and hence they need more economic support. This finding of the present study complies with the study made by Rajan (2010).

7.3.5 Gender Differentials of the Elderly Respondents: work participation

Work participation of the elderly respondents shows the economic status of the elderly in general. The wide gender gap (59.0 percent) in respect of work participation was observed unfavorable to women (**Table-7.9**). The proportion of women in the category of 'working voluntarily' was found to be lower (21.2 per cent) as against their male counter parts 78.8 percent.

Table - 7.9

Percentage distribution of the Elderly by Work Participation: Male-Female

(figures in parenthesis show percentages)

	Total	**Male**	**Female**	**Difference (%)**
Work participation				
Working	**190 (100)**	151 (79.5)	39 (20.5)	**59.0**
Not working	**337 (100)**	80 (23.7)	257 (76.3)	**-52.6**
Total	**N= 527**	N=231	N=296	**--**
Working voluntary/ under compulsion				
Voluntary	**52 (100)**	41 (78.8)	11 (21.2)	**57.6**
Under compulsion	**138 (100)**	103 (74.6)	35 (25.4)	**49.2**
Total	**N= 190**	N=144	N=46	**--**
Reasons for compulsion				
To support one self	**44(100)**	37 (84.1)	07 (15.9)	**68.2**
To support one's family	**94(100)**	66 (70.2)	28 (29.8)	**40.4**
Total	**N=138**	N=103	N=35	**--**

Source: Field survey data, 2015-16

A contrast observation of the present study was that higher proportion of both female and male elderly under the category of working under compulsion cited the reasons for working were to support their family rather than to support themselves. This implies the

poor economic conditions of the elderly in the field study area. Most of them belonged to BPL category. It is worth to be noticed that amongst a total of 35 female elderly working under compulsion, 22 females (80 per cent) showed the reason to support their families while, 66 males (63 per cent) out of a total of 103 male elderly working under compulsion were found to work to support their family.

7.3.6 Gender Differentials of the Elderly Respondents: Ownership of Property & Financial Assets

Table-7.10

Percentage distribution of the Elderly by property ownership : Male-Female

(figures in parenthesis show percentages)

	Total N=527	Male N=231	Female N=296	Difference (%)
Yes	**236**	150 (63.6)	86 (36.4)	**27.2**
No	**291**	81 (27.8)	210 (72.2)	**-44.4**

Source: Field survey data, 2015-16

Ownership of property and other financial assets ensures the economic security up to a certain level in all ages and the old age in particular. In our present study, it has been observed that elderly women compared to the elderly men have less access to the ownership of property and other financial assets (**Table-7.10**).

Non-accessibility to the ownership and management of the property and financial assets of the female elderly aggravates their vulnerability in their life particularly in the case of widows. Females, in absence of the spouse, at the older age usually confront with various difficulties in their socio-economic lives (Chaudhuri & Roy,2007).

7.3.7 Gender Differentials of the Elderly Respondents: Living Arrangements

Elderly women were observed to be in less advantageous position in respect of living arrangement compared to their male counterparts. In the living alone category women elderly compared to their male counterparts were observed to be 26.6 percent more. On the other hand, more men (10.4 percent more) compared to their female counterparts were observed to be living with their spouse.

Table - 7.11

Percentage distribution of the Elderly by Living Arrangements: Male-Female

(figures in parenthesis show percentages)

	Total N=527	**Male** N=231	**Female** N=296	**Differences (%)** (M-F)
Living alone	**30**	11 (36.7)	19 (63.3)	**-26.6**
With spouse	**134**	74 (55.2)	60 (44.8)	**10.4**
With spouse and children and grand children	**149**	68 (45.6)	81 (54.3)	**-8.7**
With children and grand children	**106**	21 (19.8)	85 (80.2)	**-60.4**
With relatives	**85**	49 (57.6)	36 (42.4)	**15.2**
Others	**23**	8 (34.8)	15 (65.2)	**-31.2**

Source: Field survey data, (2015-16)

One of the reasons of such gender gap in respect of living arrangement status of the elderly may be correlated with the current marital status of the elderly (**Table- 7.7**) i.e., widowhood. Consequently, the proportion of female in the category of living with their children and grand children were found to be more compared to their male counterparts. This indicates greater dependency of the widow elderly on their children both in terms of financial and familial support (Choudhury and Roy,2007). Present study also observed that proportion of male in the category of living with relatives was higher than the female while; female in the category of living with others were higher in proportion than the

male. The gender gaps in these two categories of living arrangement of the elderly were found to stem from mainly economic reasons rather than non-economic reasons. In other words, women compared to men have less access to ownership of property and other financial assets. This gives economic insecurity to women and hence, they may be considered as a burden for the relatives. However, this finding of the present study is corroborated with the findings of the study **'**Gender Differences in Living Arrangements among older Persons in India, carried out by Choudhury and Roy, 2007.

7.3.8 Gender Differentials of the Elderly Respondents: Selected Health and Medical Variables

Ageing itself is the cause of old age ailments. But poor health status of the elderly women is not only associated with the ageing but, also closely related to the prescribed role that she is assigned to play within a gender structured society like India. Her birth, childhood, adolescence, and adulthood are destined to social customs and traditions. Right from her childhood, she is deprived of nutrition, health and education. She is deprived of childhood; she takes care of her siblings, assists in house hold cores like cooking, collecting fire woods, fetching water from distance, sweeping floors etc. which have less leisure and cause more physical stress. Basically she plays the role of a care giver in her family but receives less care from others. Moreover, woman often does not reveal her health problem rather prefer to conceal them. Multiple pregnancies after marriage leads to several complicacies related to reproductive health. These ultimately cause deterioration of general health and some time they become chronic in nature.

NSSO, 6th round Report also states that chronic diseases like, Ulcer, problem of joint

pains were higher in the rural area and female elderly suffering from the chronic disease like Ulcer was higher in the rural area compared to their male counterparts.

Table-7.12

Percentage distribution of the Elderly by General Health Problems: Male-Female

(figures in parenthesis show percentages)

Health problems	Male	Female	Total
Blood pressure	256 (58.7)	180 (41.3)	436 (100)
Dizziness	10 (83.3)	2 (16.7)	12 (100)
Having no energy	87 (35.4)	159 (64.6)	246 (100)
Loss of memory	11 (32.4)	23 (67.6)	34 (100)
Sleeplessness	31 (33.3)	62 (66.7)	93 (100)
Joint pain	170 (43.7)	219 (56.3)	389 (100)
Incontinence	47 (31.8)	101 (68.2)	148 (100)
Stomach problem	71 (56.3)	55 (43.7)	126 (100)
Hearing problem	42 (23.7)	135 (76.3)	177 (100)
Vision problem	98 (59.4)	67 (40.6)	165 (100)
Blood sugar	216 (53.9)	185 (46.1)	401 (100)

Source: Field survey data, 2015-16

Table-7.12 depicts that the female elderly compared to the male elderly were more prone to the general health problems like having no energy, loss of memory, hearing, incontinence and sleeplessness. Male elderly suffered more from chronic diseases like Asthma, Diabetes, Heart disease, and Respiratory problems compared to their female counterpart. Almost four fifth of the male elderly were suffering from chronic respiratory problem, two third of them from chronic Asthma, chronic Heart problems, chronic Diabetes (55.7 per cent) and followed by other diseases (**Table-7.13**).

Table- 7.13

Percentage distribution of the Elderly by Chronic Diseases: Male-Female

(Figures in parenthesis show percentages)

Diseases	Male	Female	Total
Arthritis	48 (30.8)	108 (69.2)	156 (100)
Asthma	59 (67.8)	28 (32.1)	87 (100)
Alzheimer	08 (38.1)	13 (61.9)	21 (100)
Diabetes	107 (55.7)	85 (44.3)	192(100))
Cancer	23 (40.4)	34 (59.6)	57 (100)
Heart disease	127(65.1)	68 (34.9)	195 (100)
Osteoporosis	13 (23.2)	43 (76.8)	56 (100)
Respiratory problems	130 (79.2)	34 (20.7)	164 (100)

Source: Field survey data, (2015-16)

Compared to the male elderly, female elderly were found to be more vulnerable to the chronic diseases like Arthritis, Cancer, Alzheimer and Osteoporosis. Three fourth of the female elderly were observed to be reported having Osteoporosis followed by Alzheimer (three fifth of the female elderly) and Cancer (59.6 per cent), as shown in the above **Table-7.13**.

Table-7.14

Percentage distribution of the Elderly by selected health and medical variables

(figures in parenthesis show percentages)

	Total (N=527)	**Male (N=231)**	**Female (N=296)**	**Difference (%)**
Functional Status: ADL				
Independent	293 (100)	152 (51.9)	141 (48.1)	3.8
Dependent	234 (100	79 (33.8)	155 (66.2)	-32.4
Medical Attention				
Yes	177 (100)	129 (72.9)	48 (27.1)	45.8
No	350 (100)	102 (29.1)	248 (70.9)	-41.8
Access to Medicine				
Yes	**200 (100.0)**	89 (44.5)	111 (55.5)	-11.0
No	**327 (100.0)**	142 (43.4)	185 (56.6)	-13.2
Medical Assistance				
Yes	177 (100)	107 (60.5)	70 (39.5)	21.0
No	350 (100)	124 (35.4)	226 (64.6)	-29.2
Health Insurance Coverage				
Yes	84 (100)	63 (75.0)	21 (25.0)	50.0
No	443 (100)	168 (37.9)	275 (62.1)	-24.2
Old age Pension /widow pension				
Received	131 (100)	52 (39.7)	79 (60.3)	- 20.6
Not received	126 (100)	26 (20.6)	100 (79.4)	-58.8
Not required	270 (100)	153 (56.7)	117 (43.3)	13.4

Source: Field survey data, 2015-16

Functional status of the elderly defined in terms of ADL also exhibits wide gender gap (**Table-7.14**). More men compared to women were found to be in advantageous position in respect of the category w ho did not require assistance in activities in daily living. A larger proportion of elderly women (66.2 per cent) compared to men (33.8 per cent) were found in the category of ADL where who required assistance in conducting their daily activities. Gender gaps in respect of medical attention/medical assistance /medicine accessibility were observed to be unfavorable to women elderly.

Health insurance coverage and old age pension/widow pension which were considered to be the two vital social security measures were found to have covered only 15 per cent and 24.9 per cent of the total respondents respectively. A large proportion of respondents were not covered by these schemes. Generally female elderly compared to their male counterparts have less access to all such schemes. But exception is found in case of widow pension.

7.3.9 Gender Differentials of the Elderly Respondents in decision making: Living Arrangements and Property Management

Decision making leads to empowerment. It gives self content and happiness and hence closely associated with wellbeing of the elderly. In old age, retirement from work and responsibilities results in loss of income and loss of both physical as well as mental strength. This often results in low participation in decision making in various aspects including living arrangement, and property and assets management. This brings unhappiness and worries in old age.

Table-7.15

Percentage distribution of the Elderly by decision making: Living Arrangements and Property Management

(figures in parenthesis show percentages)

	Total	Male	Female	Differences (%)
Living arrangement				
Voluntary	203 (100.0)	110 (54.2)	93 (45.8)	**8.4**
Under compulsion	324 (100.0)	121 (37.3)	203 (62.7)	**-25.2**
Total	N=527	N=231	N=296	**---**
Management of Property and Assets				
Self	159 (100)	120 (75.5)	39 (24.5)	**51.0**
With the help of others	77 (100)	30 (42.9)	47 (57.1)	**-14.2**
Total	N=236	N=150	N=86	**---**

Source: Field survey data, 2015-16

Table-7.15 shows a low percentage (38.5 per cent) of respondents were capable of taking voluntary decision regarding living arrangement where participation of women were very low (45.8) as against their male counter parts (54.2) while, in the category of decision taken under compulsion, participation of women were higher (62.7) as against their male counterparts (37.3 per cent).

Similarly, gender gap in respect to the participation in decision making by elderly, in case of finance and property management, were observed in the field study area (**Table-7.15).** In both the categories, overall participation of the elderly was low but participation of the female elderly in particular, was even lower. Poor participation of female elderly in property management may be interpreted as the consequence of the assigned gender role to men and women in our society.

7.3.10 Gender Differentials of the Elderly Respondents: Regarding the Feeling of Being an Aged Person

Table-7.16

Percentage distribution of the Elderly by Perceptions regarding the feeling of being a senior citizen

(figures in parenthesis show percentages)

	Male (N=231)	Female (N=296)	Difference
Happy	19.1	17.5	**1.6**
Unhappy	62.1	67.5	**-5.4**
Cannot say	18.8	15.0	**3.8**

Source: Field survey data, 2015-16

Unhappiness is found to be higher in the elderly woman compared to the elderly man (**Table-7.16**). The reasons for this unhappiness of the female elderly may be interpreted as the consequence of unfavorable social customs, prescribed gender role to women, lack of financial support, less participation in decision making process in both family and society as a whole, large scale economic dependency etc.

Thus, the findings of the chapter-7 support the research query of the present study i.e., to understand the vulnerability of the elderly women against the background of the specific social and economic aspects. It has been found that elderly women, compared to elderly men, are more vulnerable to the ageing problems.

7.4 Conclusion

Old age vulnerability is found to be more in case of female elderly compared to the male elderly. Widowhood has been one of the major problems of the female elderly in the present study. Amongst the elderly without spouse 57.1 percent widows constitute as against 16.9 per cent of widowers. In case of divorce and separation, female elderly has

also outnumbered the male elderly. Economic deprivation at old age was also observed to be higher amongst the female elderly in general and widows in particular. Illiteracy, living alone was observed to be comparatively higher amongst the female elderly. Low participation of the female elderly compared to their male counter parts in respect to the property and financial asset management reflects the magnitude of the problems. Regarding the work participation of elderly, both male and female, it was observed that a higher percentage of elderly had to engage themselves in gainful employment under compulsion to support their families.

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Chapter-8

Summary of Findings and Conclusions

8.1 Summary of Findings

The thesis is based on empirical investigation with a purpose to provide an insight to the policy makers regarding the upcoming issues and challenges related to the old age. It is hoped that the study will provide a guide line to formulate appropriate policy relating to old age issues in the background of socio-economic variables of the elder population in the state of Assam in general and the Undivided Kamrup district in particular. A summary of the findings of the foregoing chapters in this context is felt essential to serve the purpose.

Chapter-1

Chapter-1 is an introductory one. Besides focusing on the growing trend of ageing population at the global, regional and at national level the chapter has also highlighted on the relative status of the state of Assam vis-à-vis other states of India, inter district comparison with regards to the growing trend and other related issues of elderly population based on the Report of UN, UNFPA, NSSO and Census of India, SRS, GOI.

Population ageing is a global phenomenon. It is one of the major aspects of demographic transition or demographic achievement. It first started with the developed nations in the last century. At present, it is encompassing the developing nations too. A decline in birth rate and mortality rate along with improvement in health and medical

facilities have resulted in expanded longevity of life. Demographically, women live longer than men. Thus, with the ageing of population, world has experienced a structural change in the population related to age and sex. As a consequence, feminization in the elderly segment of the population has become one of the major concerns of population ageing in some countries in the world including India. Ageing is associated with loss of physical ability, and onset of diseases. Hence, the increasing number of elderly persons puts a strain on the resources of a country in terms of health care and social care services.

According to the UN Report, 2015, globally the growth rate of older person is more than double that of the population growth rate as a whole and it is projected to accelerate in the coming decades. The developed countries were the home of 38 percent of elderly persons in the world in 2000. But, in 2015 the growth rate of elderly population aged 60 and above in these countries fell to 33 percent and it is projected to fall to 27 percent by 2030. On the other hand, in the developed region, the growth rate is found to increase by 60 percent during the period of 2000-2015 and it is projected to increase by 71 percent by 2050.

At present, India is identified as the home of the second largest number of elderly persons in the world next to china. The estimated growth rate of the number of older individuals (age 60 and older) in India is three times higher than that of the population as a whole. In 2011, Kerala amongst the major states in India, has experienced the highest growth in the number of elderly population followed by the state of Punjab and Tamil Nadu. The state of Assam has recorded 6.7 percent growth rate of elderly population as against the national average (8.6 percent). In all the states in India, the

growth rate of elderly persons in the rural area has been observed to be higher than that of the urban area. Sex ratio (1033 women per 1000 men) in 2011 showed that for the first time, the number of elderly women exceeded the number of elderly men in India. Problems of population ageing are multi dimensional. Magnitude of the problems varies in respect of place and sex. An aged person at 60 years and above suffers from physical ailment, loss of physical capability and hence loss of income. Economic contribution of the elderly becomes less and they become dependent on others. They need care and support. A major concern related to increasing proportion of the elderly women in India is the proportion of widower is comparatively lower than the widows.

While dealing with the elderly population data at the district level of Assam, it was observed that Kamrup district is the district in Assam showing highest proportion of elderly population and in eight districts namely, Kokrajhar, Dhubri, Goalpara, Morigaon, Bangaigaon, Nalbari, Baksa and Barpeta females marginally out number males in the elderly segment of population.

The present study has made an attempt to analyse the multi dimensional aspects of ageing in Assam with special reference to undivided Kamrup district with some selected background variables such as, gender, place of residence, living arrangements, marital status, activities of daily living etc. The selection of undivided Kamrup district is made on the ground that the number of elderly population in the district is highest not only amongst the districts in Assam but also amongst the North Eastern states in India. Present study covered the entire erstwhile undivided Kamrup district including the area of rural and urban Kamrup.

Chapter-2

In this chapter an outline of socio-economic profile of the elderly in undivided Kamrup district based on field survey data is made. Total sample size of the present study was 527 elderly persons (aged 60 years and above) of which 293 elderly (55.6 per cent) were from rural area and 234 elderly (44.4 per cent) were from the urban area. Male and female distribution of the sample of the present was 231 male elderly (43.8 per cent) and 296 female elderly.

From the analysis of socio-economic and demographic background profile of the respondents in **Chapter-2**, it has been observed that

- The majority (58.6 per cent) of the respondents irrespective of sex belonged to the age group of 60-69 years while, 28.8 per cent and 12.5 per cent were in the age groups of 70-79 years and 80 years and above respectively. Female elderly were found to be comparatively higher in all groups irrespective of place of residence. This finding of the present study depicts the preponderance of female elderly in the age distribution of the respondents.
- Almost one fourth of the respondents were illiterate and most of them were from the rural area. The elderly with education up to HSLC/HS and up to graduation and above were found to be in larger in proportion in urban area while, in the rural area, a considerable proportion of the elderly were found to have education below matriculation.
- Current marital status of the elderly has been observed to have a significant impact on their living arrangement and health. More than half of the total respondents (55 percent) were currently married. Comparatively a higher

proportion of widows (i.e., more than three fifth of the total of 160 widows) were found to be in the rural area. On the contrary, three fourth of the total 22 divorce and separated elderly, were found in the urban area.

- The majority of the elderly belonged to the nuclear family (94.3 per cent). So far living arrangement is concerned, larger numbers of the elderly were found to be living with their spouse, with spouse and children and grand children, with children and grand children. Living alone and living with non-relatives were negligible while, a significant percentage (17.01) of respondents is found living with their relatives.
- Information regarding monthly income, economic independency and sources of income were collected to assess the economic status of the elderly.More than two fifth of the respondents (40.6 per cent and 27.3 per cent respectively) earned less than Rs 5000/- and Rs 10.000/- per month. However, the proportion of the respondents in the higher level of income was found to be higher in the urban area.
- Regarding the economic independency it was found that more than two fifth (46.3 per cent) of the elderly economically independent. A larger proportion of the urban elderly compared to their rural counterparts were observed to be economically independent (67.1 per cent.)
- The main sources of income of the elderly respondents were found to be pension and property. Amongst the pension earners, more than 80.0 per cent were found in the urban area.
- In the study of ageing, work participation has a significant impact on the

wellbeing of the elderly. In the present field study area, majority (41 per cent) of the respondents were found to be currently engaged in farming. Self employed, daily wage earner and working as an employee in non-farming work, were found more or less in equal proportions. Respondents engaged as an employee in private enterprises were found only in urban area.

- Generally ageing is associated with illness. Hence, health issue is the one of most important issues of wellbeing of ageing. Response to the queries regarding the health perception of elderly shows that
    - Nearly half of the respondents (47.6 per cent) perceived their health status as bad while, 31 percent of them considered their health condition as good and the rest (21.1 per cent) as fair.
    - Another important observation from the study is that, 70.2 per cent elderly irrespective of sex and place of residence was found suffering from at least one chronic disease.
    - The coverage of the health insurance was found considerably poor especially in the rural area (15.9 per cent).
    - 55.6 per cent of the respondents were found to be independent of ADL. A significant rural-urban differential regarding the ADL status of the elderly has been observed. Unassisted activities of daily living were found to be more amongst the rural elderly, compared to their urban counterparts.
- Information about the perceptions of respondents regarding the old age shows that emotional problems amongst the elderly were high (75.5 per cent). The other

problems as reported by the respondents are economic problems (67.6 per cent), prestige problems (67 per cent) in the family as well as in the society and house hold problems (54.8 per cent).

- Perceptions regarding the feeling of being an aged person were asked. Smaller proportion (i.e.22.2 per cent) of the respondents reported feeling happy while 13.3 were not sure about it. 19.1 percent respondents in rural area revealed feeling happy which was higher than the urban area (13.3 per cent).

Chapter- 3

Chapter-3 outlines of the socio-economic back ground of the Living arrangements of the elderly. Living arrangement is an important aspect in dealing with the welfare of the elderly persons. The elderly being the dependent need the care and support of others in their life but this has not been revealed from our study. Living with children does not always ensure the elderly the care and support from their children. The significant observation from the Chapter-3 may be listed as below.

- More than half (55.1 percent) of the urban elderly as against their rural counterparts (43.0 per cent), either with spouse or without spouse, was found to be living with their children and grand children. The reason is that the cost of accommodation is higher in the urban area.
- On the contrary, elderly in the urban area, living with relatives (12.8 percent) and non-relatives (9.0 percent) constituted a considerable proportion i.e., more than one fourth of the total respondents.

- It is observed that elderly either with spouse or without spouse living with children or grand children was higher (55.1 percent) in the urban area.
- Respondents were also asked about the reasons for not staying with children. Majority of the respondents (33.8 per cent) reported that children did not like to live with their parents and the rest (40.8 per cent) reported that children were staying away from home for different reasons like, engagement in work or, better job opportunities etc.
- It is observed that in the rural area, children were more reluctant (35.3 per cent) to live with their parents. This is because of the high aspiration of life and the influence of the modern concept of life in urban area.
- A higher proportion of elderly (40.7 per cent) in the rural area reported children were staying away from home as against their urban counterparts (33.3 per cent). This may be due to the migration of the young to the semi urban and urban areas in search of employment.
- Elderly parents, in the Indian traditional family system, are less likely to stay with their married daughter. In the present study area, 46.9 per cent of the elderly were found to prefer to live with their son and 43.3 per cent of the respondents had no preference while, 9.9 per cent of the respondents revealed their preference for daughters to live with. Preference for daughter is found to be more in urban area compared to the rural area.
- Decision regarding the current living arrangement status shows that in more than half of the cases decisions were taken under compulsion. In this context, urban elderly were found to have less freedom of choice as compared to their rural

counterpart. High cost of accommodation, less number of care givers in the urban households may be accounted for their compulsion in this regard.

- The proportion of the respondents living with their children has been observed to decrease with the increase of their age. Higher proportion of the elderly (57 per cent) in the young old age group (60-69 years) was observed to live with their children as children were found to prefer to live with young old parents rather than with their oldest old parents(80 years and above). This implies that there is a need for extending care and support to the elderly in absence of their familial support.
- Economic independency provides economic security not only to the elderly themselves in their old age but also to their children. In the field study area, more than half of the economically independent elderly (51.6 per cent) were found to live currently with their children. Amongst the rest of the economically independent elderly who were not currently living with children, some revealed their personal choice to live independently while, some other cited the reason that their children migrated to other place either in search of jobs or for better future opportunities.
- In contrast to this a significant observation of the present study is that the majority (54.4 per cent) of the dependent elderly were not living with their children and the reason for such current status of living arrangement on the part of the children may be to avoid the financial liabilities associated with the care and old age support of their elderly parents.

Chapter–4

Chapter–4 makes a review of the elderly work participation with the interaction of the selected background variables. It reflects the economic status of the elderly in particular and hence, helps in policy formulation regarding the old age security plan and programmes. In India, the elderly work participation was approximately 7 per cent of the total work force.

- In our study, 36.1 per cent of the elderly were found engaged in the gainful employment. Majority of the rural elderly compared to their urban counterparts were engaged in gainful employment on account of the prevailing large scale poverty in the rural area.
- More than half of the working elderly in the present study were found "working" beyond their retirement age in the age group of 60-69 years.
- The participation of male elderly in economic activities was observed to be higher (65.4 per cent) than their female counterparts (13.2 per cent).
- Large proportion of the elderly work participation (72.6 per cent) was under compulsion and majority of them (i.e., 93.5 per cent) belonged to the young old age category (60-69 years). It implies that these elderly people do not have any alternatives but to engage themselves for their survival and in this situation, rural elderly, were found to be more vulnerable in comparison to that of the urban elderly.
- Economic independency of the elderly was found to be one of the important factors determining the work participation with 21.6 per cent of the economically independent elderly engaged in gainful employment against 52.8 per cent for other economically dependent counterpart.

- Engagement in economic activities under compulsion to support one's family was found to be higher in case of the rural elderly while in the case of urban elderly it was to support oneself.

In order to examine the effects of some selected background variables on the work status of the elderly, Binary Logit Regression has been carried out. The logit odds ratios of work participation of the elderly shows that the predictor variables like, sex, age, education, economic dependency, marital status and health are statistically highly significant. Results of binary logit regression are as follows:

- Regarding the variable sex, it was found that the work participation of the male elderly is 5.564 times more (significant at 1% level) than the female elderly.
- The logit odds of work participation showed that the participation in the gainful employment by the elderly decreases with ageing.
- The logit odds ratio of work participation of elderly also show that the elderly with education below matriculation and education up to HSLC/HS are likely to participate more in gainful employment (odds ratio being 4.735 and 1.107) than the elderly with education up to graduate and above (reference category). The reason may be that the elderly with education up to HSLC/HS have more access to the jobs opportunities compared to their counterparts with other educational qualifications.
- The probability of economically dependent elderly to participate in gainful activity was found to be 2.968 times more than that their economically independent counterparts (p-value being 0.000). It is obvious that more work participation will help the elderly to earn more income.

- The binary logit regression exhibits that the probability of participation in the gainful employment by the elderly in the 'other' category is 2.888 times more with (P- value being .001) than that of the elderly who are currently married (reference category). This finding of the present study may be interpreted to mean that the elderly other than the currently married elderly, mostly lack familial support and hence the work participation is inevitable for them.
- Elderly with good health were nearly three times more likely to work (odds ratio being 2.968) as compared to the elderly who are not in good health.

Chapter-5

Chapter-5 deals with the health status of the elderly and other related issues. Health of the elderly has been analysed in two sections: general health status and Functional status.

- General health status of the elderly refers to general health problems, multiple chronic diseases of the elderly, access to hospital utility services, medical support and care etc.
- Common or general health problems like**,** fever, headache, loss of energy and memory, chest pain, joint pain etc were found to be higher amongst rural elderly.
- Among the chronic diseases-blood pressure, dizziness, incontinence, problems of sleeplessness were found to be more among the urban elderly.
- Among the socio-economic variables, the level of education was found to have a negative effect on the common health problems of the elderly. But education was found to have no impact on the multiple chronic diseases of the elderly.

- The level of income was observed to have a positive impact on the common health problems while it was not found to have a definite influence on the chronic health problems.
- Regarding the marital status, both the common and chronic health problems amongst the married elderly were found to be less in proportion compared to the unmarried, widower, widow and divorcee/separated elderly.
- Health condition of the working elderly was found to have fewer health problems (both common and chronic) problems in comparison to those elderly who were found not working in their later life. Similarly elderly having social contact were found to have fewer health problems than the elderly those who did not have social contact.
- Regarding the accessibility to the medical services or medicine, government hospital was found to be the main source for more than fifty per cent of the elderly because of the provisions for free medical service and medicines in government hospitals. Rural elderly preferred to visit government hospital while, elderly from urban area preferred to visit private hospital.
- Need for proper medical assistance and care were observed to be high. Two fifth of the elderly reported that they did not get free medicine at all from the government hospital. On the other hand, two third of the elderly in the present study reported that they did not receive medical attention when they fell sick from their family members. However, vulnerability in this context was found to be greater in case of rural elderly compared to their urban counterparts.

Among the reasons, as reported by the respondents, of not getting medicines and medical care apathy from the family was highest (55.5 percent) followed by inadequate financial resources and no treatment facility in the nearby hospital (40.6 per cent).

- The main care givers of their later life were found to be the children (47.7 percent), followed by the spouse (39 per cent), relatives (9.6 per cent) and non relatives (4 per cent).
- Functional status refers to the degree of ability of the elderly to carry out their daily activities. Aged persons face difficulties in these areas, as a consequence, they become less physically independent and their daily tasks become much difficult for them to perform. To measure their functional status, one of the methods is an index of the activities of daily living is developed by Katz. He defined six activities (like, bathing, dressing, feeding, use of the toilet, transferring and continence) which the elderly can perform with or without assistance.
- The functional status of elderly in the present study shows that 55.6 per cent respondents can perform their daily chores without any assistance. In case of the rural elderly, it was found to be 71 per cent while, in case of urban elderly it was 36.3 percent.
- Male elderly was observed to be better off (51.9 percent) than their female counter parts (48.1 percent) in respect to ADL independency.
- The Ordered Logit Regression analysis of Functional status of elderly (ADL) found that socio-economic variables like place, sex, marital status, age, social

contacts have significant association with the ADL status of the elderly respondents.

- Male elderly were having better ADL compared to the female elderly. Regarding marital status, currently married elderly were found to be placed at higher ADL in comparison to others. Again elderly having social contacts were found to have better ADL status compared to those who did not have social contact.
- Elderly with educational qualification graduate and above were found to be less likely on a higher level of ADL compared to the elderly in the reference category (illiterate).
- The variable economic independency was found to be insignificant in determining the ADL status of the elderly.

Chapter - 6.

The elderly being the dependent need the care and support of others in their life. The Government of India, realizing this need, initiated social security measures and benefit schemes including legal protection for the elderly .In this chapter, focus has been made to assess the level of awareness of the elderly on different government social security schemes and the legal provisions which are meant for the welfare and the legal protection of the elderly. The significant observation from the chapter-6 may be are as follows:

- The nature of the issues of the elderly in developing countries is vastly different due to factors such as chronic poverty, unemployment and underemployment as well as the existence of a large informal sector.

- The need for social security net is important for the elderly people of the society because of the deteriorating physical condition, vulnerability due to increase in age and a high percentage of the elderly especially women living in poverty.
- The legal provisions for the elderly are - code of criminal procedure, 1973 act, Hindu Adoption and maintenance act, 1956 and the maintenance and welfare of parents and senior citizens act, 2007.
- Though the overall knowledge of the elderly of the present study area on legal provisions was found to be significantly low, but the awareness of the urban elderly was observed to be more in comparison to their rural counterparts.
- Out of the three legal provisions, majority of the respondents (14.6 per cent) were observed to have the knowledge in the 'Maintenance & Welfare of Parents & senior Citizen Act, 2007'.
- Similarly, so far as the old age benefit schemes are concerned, majority of the respondents were observed to be aware about the IGNOP scheme (32.4 percent). A significant observation is that rural respondents were found having more knowledge regarding all the three schemes compared to the urban elderly.
- More than one third of the respondents (36.1 percent) were found having awareness regarding the concessions given to the senior citizens for the case of interest accrued schemes. More than half of the urban elderly was aware of the exemption in income tax and the concessions on the savings schemes of the post office and the banks.

- In the present study, senior citizen association /NGO was found to be the main source (33 percent) regarding the awareness about different welfare schemes of the elderly respondents followed by TV, newspaper etc.
- More than three fifth elderly was covered under the IGNOAP, IGNWP and ANNAPURNA schemes. On the whole, the total coverage of the rural BPL elderly under such schemes was found to be 75 percent while, it was 25 per cent in urban BPL elderly.
- It is revealed from the study that nearly one third of the elderly of the present study utilized at least one benefit scheme. This was found to be more in the urban area (58.1 percent) compared to the rural area. The highest utilization of the benefits from the services was observed in the deposit schemes of the post office/banks. by the elderly.
- Unmet need analysis in the care and support system generally refers to the concept that there is a need which is not met. It is very crucial in assessing the effectiveness of the care and social support provision.
- A larger proportion of the BPL elderly remained uncovered under the old age welfare schemes .This indicates 35.9 percent needs of the BPL elderly remained unmet. The unmet need in the rural area was found to be higher (37.9) than the urban area (27.9).

Thus, on the basis of the above findings of the present study, it can be concluded that due to the poor awareness or knowledge on legal provisions and old age beneficiary schemes, the elderly of the present study area, were exposed to old age vulnerability. This satisfies one of the research questions of the present study that is “whether the

elderly are aware of the prevalent legal provisions which are for the protection of the benefit of the elderly"

Chapter-7

In **Chapter -7** the gender gap related to socio-economic variables are analyzed to assess the old age vulnerability of the female elderly vis-a-vis male elderly in present field study area. The important findings are as follows:

- Feminization has been observed in all the age categories of elderly Moreover, it was found to increase with the increase in age of the elderly. The gender gap in numbers of elderly was observed to be more pronounced in the rural area compared to the urban area.
- A striking gender gap was observed in the level of literacy amongst the respondents. The percentage of illiterate female elderly was found to be higher (58.7percent) than their male counter parts (41.3 percent).
- A gender gap has also been observed in terms of current marital status of elderly. 32.1 percent widows constituted as against 7.4 per cent of widowers. In case of divorce and separation, female elderly has also outnumbered the male elderly.
- Working under compulsion was found to stem from the poor economic conditions of the elderly in the present study. The major reason for working under compulsion was to support one's family. Higher proportion of female elderly working under compulsion cited the reason as to support their families.
- Elderly women compared to the elderly men had less access to the ownership of property and other financial assets. This gives economic insecurity to women in

their widowhood and hence they may be considered as a burden by the family. This was found to have an impact on the living arrangement of the elderly.

- In the living alone category female elderly compared to their male counterparts were observed to be 26.6 percent more while, more male (26.8 percent more) compared to their female counterparts were observed to be living with their spouse. One of the reasons of such gender gap in respect of living arrangement status of the elderly may be correlated with the current marital status of the female elderly i.e., widowhood.
- Female respondents were found to be more vulnerable compared to their male counterpart in respect to the common or general health problems and chronic diseases.
- Men compared to women were found to be in advantageous position in respect of conducting their daily activities without assistance. In the category of dependent of ADL women were found more in proportion compared to men (32.4 per cent more). This implies that there is a huge gender gap of unmet need for assistance to perform ADL amongst the elderly.
- Gender gaps in respect of medical attention/medical assistance /medicine accessibility were observed to be unfavourable to elderly women.
- Health insurance coverage and old age pension/ widow pension which are considered to be the two vital social security measures were found to be very poor i.e., 15 per cent and 23.7 per cent respectively. Generally female elderly compared to their male counterparts were found to have less access to all such schemes. But exception was found in case of old age or widow pension. As

women were found to be more vulnerable to widowhood, out of the total beneficiaries of old age or widow pension, female elderly were found to constitute a larger proportion.

- Gender gap in respect to the participation in decision making by elderly, in case of property management were observed in the field study area. However, poor participation of female elderly in property management may be interpreted as the consequence of the assigned gender role to men and women in our society.
- Unhappiness is associated with ageing process, but in the case of elderly women it was found to be higher than their male counterparts. The reasons for this unhappiness of the female elderly may be interpreted as the consequence of unfavourable social customs, prescribed gender role to women, lack of financial support, less participation in the decision making process in both the family and society as whole and large scale economic dependency etc.

Thus, the findings of the **chapter- 7** support the research query of the present study i.e., to understand the vulnerability of the elderly women against the background of the specific social and economic aspects. It was found that elderly women compared to elderly men were more vulnerable to the problems associated with ageing process.

8.2 Conclusion

From the above findings it appears that the problems of population ageing has multi dimensional aspects. Extended life expectancy of the aged persons at 60 years and above as a whole and the women in particular, has caused structural change in the size and sex composition of the population. This has raised various social as well as

economic issues related to old age such as, ill health, loss of functional capability, economic dependency, and economic deprivation, work participation under compulsion, etc. Hence, there is a big need for old age care and support to the elderly. In absence of sustainable social security mechanism, the life of the elderly will become more stressful and vulnerable in the coming years.

In our study, economic deprivation at old age was also observed to be higher amongst the female elderly in general and widows in particular. Low participation of the female elderly compared to their male counter parts in respect to the property and financial asset management reflects the magnitude of the problems. Regarding the work participation of elderly, both male and female, it was observed that a higher percentage of elderly had to engage themselves in gainful employment under compulsion to support their families.

Majority of the elderly, particularly in the rural area, were found depending on Government hospital for their treatment. Need for proper medical assistance and care were observed to be high in the present study. Irregular supply and non-availability of free medicine in the government hospital were found to be the main reasons of the deprivation of medical care and support amongst the economically dependent elderly in the sample study area. This indicates that there was unmet need for medical attention and access to medicine in Government hospital amongst the elderly who were economically dependent. However, vulnerability in this context, was found to be greater in case of rural elderly compared to their urban counterparts.

An important observation of the present study is that the proportion of the elderly living with their children decreased with the increase of their age when they were in need of more care and support. But, it was not always forthcoming. In most of the cases, children preferred to live with their elderly parents as long as they were supportive and care givers for their children.

Awareness on the legal provisions for the protection of the life of the elderly and old age benefit schemes was found to be very poor in the present study area. This led to low level of utilization of such schemes. Poor knowledge regarding legal provisions for the old age protection amongst the elderly was found to be the main reason of their deprivation of enjoying the benefits of legal provision.

8.3 Policy Implications

The above analysis of the present study suggests some policy implications to promote wellbeing of the elderly people.

- It is essential to initiate more extensive old age social security policies so that it can also reach out to more vulnerable section of the elderly.
- Special provision should be made for mobile medical van for the elderly people at block level. So that service can be provided at their door steps. A well integrated health policy should also be framed to meet up the health problems of the elderly.
- Awareness programme on legal provisions and the various old age benefit schemes should be conducted extensively. Special emphasis should be given to rural area.

- It is necessary to strengthen the familial as well as social support for taking care of the elderly members.
- Setting up of more senior citizen association in the urban and rural areas is important as it helps accessibility to information and socialization of the elderly people.

8.4 Limitation

The thesis will remain incomplete if the areas of limitations of the present research are not highlighted.

- Limited sample size in our study may be viewed as a limitation of the study in the context of drawing inferences relating to old age problems.
- To understand familial support, collection of data on the perception of the children regarding the old age issues are considered to be most important. Hence, inclusion of children as the respondents in our sample study might have yielded us a better result in this regard.
- Last but not the least, there is a possibility of omissions in the process of data collection regarding the quantitative information like, age, monthly income, reasons for not living with children, decisions regarding the current living arrangement status etc. as they are based on their knowledge.

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Bibliography

Agrawal A, Lubet. A, Mitigang E, Mohanty. S, and Bloom, 2016	*'Population Ageing in India: Issues and Options: working paper series: PGDA working paper, no: 132; p : 13.*
Agrawal, S, (2012)	*Effect of Living Arrangement on Health status of Elderly in India: Asian Population Studies, vol: 8, pp: 87-101.*
Alam, M. (2005)	*Ageing, Old Age Income Security and Reforms: An Exploration of Indian Situation. Economic and Political Weekly, pp. 3731-3740 August 14.*
Atal, Y.,2001	*The UN Ageing Populatin, published by Rawat Publication, pp.4-5*
Atchey, 1977	*"Theories of Ageing", Beacock, New York, pp.72.*
Barrientos, A. M. (2003)	*Old Age Poverty in Developing Countries: Contributions and Dependence in Later Life. World Development, 31(3), pp. 555-570.*
Barrientos & Shepherd, 2003	*Women ageing: Changing identities, Challenging Miths London: Routledge Publication.*
Beveridge, W., 1942	*Social Insurance and Allied Services , Beveridge Committee Report, London, HMSO, Cmd. 6404*
Bloom, D. E., 2014	*"Economic implications of ageing in China and India. Journal of economics of ageing, Vol-4,pp: 1-154*
Bloom, D. E., Canning, D. and Fink, G. (2011)	*Implications of Population Ageing for Economic Growth, Programme of Global Demography of Ageing, Working Paper Serties, PGDA Working Paper No: 64; pp: 1-32, Last Accessed on 21st Nov, 2013 (http://www.hsph.harvard.edu/pgda/working papers/2013/PGDA WP 64.pdf)*
Bongaarts J., 2001	*'Population Ageing fertility , and Work- Life Balance'. Journal of social Policy, Vol-35(4) pp: 671-688*
Bose, A., 2000	*Demographic Transition, www.india-seminar.com/2000/488/488%20bose.htm,accessed on September,2015*
Burgess, 1960	*,"Ageing in Western Culture", Chicago University, Chicago Press,pp.115.*
Chakrovorty Dhar R.G., 1998	*"The Greying of India", Sage Publication, New Delhi,2004.pp.197-200.*
Chanana, H.B. and Talwar, P.P. (1987)	*"Ageing in India : Its socio-economic and health Implecation. Asia Pacific Population Journal 2(3), pp:24*

Chaudhuri & Roy K, 2007	*Gender Differences in Living Arrangements among older Persons in India; JEL Codes: J14, O15.*
Cheung, U.B., 1998	*"Ageing ,Health and Public Policy", Population and Development Review, New York, pp.99*
Cumming, E. and Henry, W., 1960	*"The Process of Disengagement", New York, Basic Book, pp.160.*
D'Souza,1969	*Changes in Social Structure and Changing Roles of older People in India", Proceedings of 8th International Congress of Gerontology, Washington, Vol.1,pp.429.*
Dandekar, 1986,	*The Elderly in India, Sage Publication, New Delhi, pp:64.*
Davidson P., M.M. Digiacomo, and S. McGrath J., 2011:	*The feminization Ageing: How will this Impact on Health Outcomes and Services?: Health Care for Women International, vol:32, p:1033.*
Davies, M., 2003	*Older Populations Ageing Individuals and Health for All". World Health Forum, 10, pp: 293-306*
Deaton, A and Paxson,C., 1995	*Measuring poverty among the elderly. NBER working Paper No:5296, Cambridge, Massachusetts*
Dey, A. B. (ed. 2003)	*Ageing in India ,World Health Organization and Ministry for Health and Family Affairs, Government of India.*
D'Souza, 1989	*'Changing Social Scene and its Implications for the Aged in KG Desai (ed), Ageing Indi, Ashis Publishing House, New Delhi.*
Fries,S.,1980,	*"Ageing ,Natural Death and The Compression of Morbidity",New England Journal of edicine,Vol.303; pp.130-136.*
Gangadharan,1990	*"Social Networking Of Ageing",K.R.Publishing House, Bombay, pp.46.*
Ghosh, A., 2004	*"The Sunset of their life", edited A.Kapoor and Stwanly Kapoor. Mittal Publications, New Delhi; pp- 24.*
Giridhar G and Sathyanarayana K.M ,2014:	*"Population Ageing in India", India Cambridge University Press, New Delhi.*
Goldman, korenman, Weinstein,1995	*Inequality and Ageing, Social Policy of Ageing,Critical Perspectives", Policy Press, U.K,1999.pp.178-189*
Gruber and David, 1999	*"Ageing and Society",Prentice Hall,New Jersey;pp26.*
Gruenberg,E.M., 1977	*"The Failure of Success",Milbank Memorial Fund,Quarterly Health and Summer,Vol.55;.pp.3-24.*

Gulati and Irudaya Rajan 1999	*The Added Years: Elderly in India and Kerala. Econommic and Political Weekly, Vol: Xxxiv, No: 44, pp: 46-51*
Gulati and Rajan, 1991	*Women and work in kerala: a comparison of the 1981 and 1991 censuses. Indian journal of gender studies, Vol:4; Nos:2; pp: 46-51*
Gurumurthy,K.G.,1998	*Health Condition of the Aged. The Aged in India, New Delhi:Reliance Publishing House, pp: 68-80.*
Irudaya Rajan S, Mishra US and Sharma PS. 1995	*Living Arrangements among the Indian Elderly,Hongkong Journal of Gerontology, Vol. 9, No. 2, pp. 20-28.*
Irudaya Rajan, S, Mishra US and Sarma PS., 1996	*INDIA: National Aging Trends. Pp. 79-104 in United Nations. 1996. Life Long Preparation for Old Age in Asia and the Pacific. United Nations, New York. ST/ESCAP/1684.*
Irudaya Rajan, S, Mishra, US and Sarma, PS. 2003.	*'Demography of Indian Ageing, 2001-2051', Journal of Ageing and Social Policy, 15(2&3), 11-30.*
Irudaya Rajan, S. 1989.	*Aging in Kerala: One More Population Problem? Asia-Pacific Population Journal, Volume 4, No. 2, June, Pp. 19-48.*
Irudaya Rajan, S. 1999.	*'Ageing and Social Security', in B. A. Prakash (ed.), Kerala's Economic Development: Issues and Problems, pp.49-71. New Delhi: Sage Publications.*
Irudaya Rajan, S. 2001a.	*'Home Away fromHome: A Survey of Old-age Homes and Inmates in Kerala, India', Journal of Housing for The Elderly, 16(1), 125-50.*
Irudaya Rajan, S. 2001b.	*'Social Assistance for Poor Elderly: How Effective?', Economic and Political Weekly, 36(8), February 24, 613-617.*
Irudaya Rajan, S. 2002.	*'Social Security for The Unorganized Sector in South Asia', International Social Security Review, 55(4), 143-156.*
Irudaya Rajan, S. 2004.	*'Chronic Poverty among Indian Elderly',Working Paper 17, CPRCIIPA,New Delhi.*
Irudaya Rajan, S. 2004.	*'Fertility change in South India', in C. Z. Guilmoto and S. IrudayaRajan (ed.), Fertility Transition in South India. New Delhi: Sage Publications.*
Irudaya Rajan, S. and Kumar, Sanjay 2003	*Living Arrangements among Indian Elderly: Evidence from National Family Health Survey. Economic and Political Weekly, 38(1), 75-80.*
Irudaya Rajan, S.,Mishra, US and Sarma, PS. 1999.	*India's Elderly: Burden Or Challenge? New Delhi: Sage Publications and London: Thousand Oaks.*
Jackson, R. and Howe, N.	*"The Graying of the Great Powers, Demography and*

(2008)	*Geopolitics in the 21st Century, Major Findings of the Report", published by CSIS, May 2008 http://csis.org/files/media/csis/pubs/080630_gai_majorfindings.pdf*
Kabeer, 2002;	*Effects of Social Change on the Health of the Elderly; Evidence from a micro study. Journal of Family Welfare, 38 (1); pp: 17-19*
Kan, Park and Chang, 2000	*'A Dynamic Model of Elderly Living Arrangement in Taiwan', Paper presented at the Annual Meeting of the Population Association of America, Los Angeles, CA.*
Kane,R.,1990	*"Improving the Health of the Older People,A World View",Oxford University Press,pp.64*
Karkal, M. (1999)	*Ageing and women in India, economic & political weekly, Vol:34,No:44,pp: WS 54-WS 56, October,30-November 5, 1999*
Katz.S, 1983	*"Assessing Self Maintenance Activities Of Daily Living"*
Kinsella, K. and Velkoff, V.A. (2001)	*An Ageing World Population -Paris- 2002, Vol. 57; Part 6, pp. 928-929.*
Kinsella, K. and Phillip, D.R., (2005)	*Global ageing: the Challenges of Success. Population Bulletin, 60(1)*
Knodel, J. (1999)	*'The demography of Asian ageing: Past Accomplishment and future Challenges for Asia', Asia Specific Population Journal, last Accessed on 15th Februray 2016 www.unescap.org*
Kodoth, P and Rajan,S.I., 2008	*'Ageing, Gender and Property Right to India.'In institutional Provisions for Care for Aged. Perceptive from Asia and Europe, Anthem Press, London.*
Kranmmer ,M., 1980,	*"The Rising Pendamic of Mental Disrdres and Chronic Diseases and bility",Acta,psychiatric,Scandenevica,supplementum,Vol.285 (62)*
Legare and Martel, 2003;	*Living Arrangement of Older Persons in the Early Ninety's: An International Comparison, Genus, Vol: LIX, No: 1, Pp:85-103*
Lesthaeghe, R., 2000	*Europe's Demographic Issues: fertility, household formation and replacement migration", Working Paper, UN expert group meeting on Policy Responses to population ageing and population decline, New York, Uniet Nations.*
Lillard, L.A., and Panis, C.W.A., 1996	*Lillard ,L.A, panis, C.W.A, 1996; "Maritial Status Ageing and work Force", Pillboard Corporation,U.S.A, pp : 94*

Lopez,A., 1992	*"Some Issues in the Demography and Epedemiology of Ageing Polpulation",World Development Report on Elderly,pp.95.*
Mantan ,K.G.,1982,	*Changing Concept of Morbility And Mortality of Elderly Population", Milbank Memorial Fund Quarterly, Vol.60(2), pp: 183-244.*
Martel and Carriere, 2003	*Descriptive analysis of the effect of marital dissolution on living arrangements of older person: the Canadian No:1, pp:137-167*
Mirkin, B. and Weinberger, M. B., 2012	*"The Demography of Population Ageing" population division, United Nations, p: 41-58 ;last accessed on 7th December 2014*
Murthi, Ram ,.1970,"	*Life Satisfaction in the Older Year",Indian Journal of Gerontology,Jaipur,Vol.2,No.3-4,pp.66-70.*
Muttagi. P.K (1997)	*Ageing Issues and old Acare.Classical Publishing Company. New Delhi.pp.34.*
Myers, G.C.,, 2001	*"The Ageing of Population, in International Perspective on Ageing: Population and policy Challenges, Policy Documents Studies, pp:1-40, UN Fund for Population Activities.*
Nagarajan, R, Teixeira, A. A. C. and Silva, S. 2013	*"The Impact of Population Ageing on Economic Growth: An Indepth Bibliomatric Analysis", FEP Working Paper No: 505, pp:1-28, last Accessed on 23rd February, 2014, http://wps.fep.up.pt/wps/wp505.pdf*
Nath, D.C and Deka, A.K., 2005	*Economic Potentiality among Elderly in a North Eastern State of India, The elderly Emeging Issue, Bangladesh Association of Gerentology, pp: 109-126.*
Pal, S. and Palacios,R., 2008	*'Old Age Poverty in the Indian States: What Can the Data tell Us?' World Bank South Asia Working Paper Series.*
Palloni,A., 2001	*"Living Arrangements of Older Persons", United Nation Population Bulletin, Special Issue Nos.42/43, Department of Economic and Social Affairs, Population Division, New York.*
Pandey and Jha,2011:	*Widowhood and Health of Older in India: examining the role of economic factors using structural equation modeling: International Review of Applied Economics, vol: 26, pp: 111-124.*
Prakash, I. J., 1999	*'Ageing in India' WHO, Genava, last assessed on 14/09/2012, http://www.who.int/hpr2/ageing/ageing in india.pdf)*
Raghani , Singhi ;1970	*A Survey of Problems of Retired Persons", Indian Journal of Gerontology,Jaipur,Vol.2,No.1-2,pp.34.*

Raj and Prasad (1971)	*A Study of Rural Aged Persons in Social Profile",Indian Journal of Social Work,Bombay,Tata Institute of Social Science, Vol.32(2), pp.155-162.*
Rajan I.S., (2002)	*Home Away from Home: A Survey of old Age Homes and Inmates from Kerala, India. Journal of Housing for the Elderly, Volume 16, No.1 and 2, pp. 125-50.*
Rajan I.S., (2002)	*Social Security for the Unorganized Sector in South Asia. International Social Security Review, Volume 55, No 4, pp. 143-156.*
Rajan I.S., (2004)	*Chronic Poverty among the Elderly. Working Paper 17, Chronic Poverty Research Centre, IIP A.*
Rajan, S. I, 2010	*ILO Asia Pacific working paper series, ILO, March.*
Rajan, S. I, 2010	*ILO Asia Pacific working paper series, ILO, March.*
Rajan, S. I. (2001)	*Social Assistance for Poor Elderly: How Effective? Economic and Political Weekly, Volume XXXVI, No 8, February 24, pp. 613-617.*
Rajan, S. I. and Kumar, S. (2003)	*Living Arrangements among Indian Elderly: Evidence from National Family Health Survey. Economic and Political Weekly, Volume XXXVIII, No.1, pp. 75-80.*
Rajan, S. I. and Prasad, S. (2008)	*Social Security for the Aged in the Informal Sector. In Institutional Provisions and care for Aged, perceptive from Asia and Europe, (Anthem Press, London).*
Rajan, S. I. and Zachariah, K. C. (1998)	*Long Term Implications of Low Fertility in Kerala. Asia Pacific Population Journal, Vol. 13, No 3, September, pp. 41-66.*
Rajan, S. I. et al. (1995)	*Living Arrangements among the Indian Elderly. Hong Kong Journal of Gerontology, Vol. 9,No. 2, pp. 20-28.*
Rajan, S. I. et al. (1999)	*India National Ageing trends, life long preparation for old age. Asia and the pacific Journal United Nations.*
Rajan, S. I. et al. (1999)	*India's Elderly Burden or Challenge (SAGE publication New Delhi/Thousand Oaks/London).*
Rajan, 2004;	*Chronic Poverty among the Elderly. Working Paper 17, Chronic Poverty Research Centre, IIP A.*
Rajan, S.I. and James, K.S. (ed. 2004)	*Demographic Change, Health Inequality and Human Development in India. Centre for Economic and Social Studies, Hyderabad and Manohar Publishers and Distributors, New Delhi.*
Rajan,S.I, 2003	*Chronic Poverty Among the Indian Elderly.Chronic Poverty Research Centre and Indian Institute of Public*

	Administration Working Paper,17. Indian Institute of Public Administration, New Delhi.
Rajan,S.I, Misra, S, US and Sharma, PS, 1995	*Living arrangements among the Indian Elderly, Hong Kong Journal of Gerontology, Vol: 9, No: 2, pp: 20-28*
Rajan,S.I, Misra, S, US and Sharma, PS,,1999	*Indias Elderly, Burden or Challenges?" ,Sage Publication, New Delhi,pp.193.*
Raju S., 2011	*Studies on Ageing in India: A review BKPAI, a working paper No. 2, UNFPA, New Delhi.*
Sati P.N 1988,"	*The Elderly in India",Himangshu Publication ,pp.14.*
Scaffer, 1999;	*"Determinants of Livingarrangements of The Elderly". W99-6,Joint Centre for Housing Studies Harvard University.*
Seigal, J.S., 1980	*"On the Demography of Ageing", Demography JVol:17(4), pp: 345-364*
Selvaraj, S., 2011	*"Elderly Work Force Participation, Wage Differentials And Contribution to Household Income", New Delhi: UNFPA, Working Paper- IV*
Shanas, E, 1968	*"Old people in three industrial societies", Routeledge and Kegen Paul Publication,London.pp.5.*
Shanmugam,1970	*"Personality Traits of Adolescents, Adults and Old Persons", Indian Journal of Gerontology,Jaipur,Vol.2,No.3-4,pp.76.*
Sharma, 1971;	*"ASurvey of Happiness and Unhappiness in old Age",Indian Journal of Gerontology,Jaipur,Vol.3,No.3-4,pp.77.*
Sing, A and Das, U., 2012	*"Determinants of Old Age Wage Labour Participation and Supply in India: Changes over the past two decades", Available from: http://ssrn.com/abstract=2196183.Accessed on 27/03/2013*
Singhi, 1970	*A Survey of Problems of Retired Persons", Indian Journal of Gerontology,Jaipur,Vol.2,No.1-2,pp.34.*
Skidmore, Thakeray, Farley, 1998	*"Ageing and quality of life,"Routledge Publication, London, 2001, pp:30-70.*
Wyke, Ford, 1995; Joung, Meer and Mackenbach, 1995	*"Ageing ,Women and Ethnicity", Population council ,NewYork,pp.56-70*
Zeimmer,Z., 2001	*"Living Arrangement and scocio-demographic condition of older adults in Cambodia. Journal of cross-cultural gerontology. Vol-16(4), pp:353-381.*

Report

1. Census of India: 1951,1961,1971, 1981, 1991,2001,2011
2. ESCAP study (John Bongarts and Zachary Zimner, 2001).
3. Help Age India, 2008.
4. Indian Economic Survey 2004-5
5. UNESCO,1985- Robeldo , L.M.G
6. SRS Bulletins, 2001, 1991, R.G.I. New Delhi.
7. Statistical Hand Book of Assam 2006 &2013 Govt. of Assam
8. The sex age distribution of population, department of economic and Social Affairs, UN New York.
9. U.N Report 1988,.Economic and social implications of population Ageing
   U.S Census Bureau, an Ageing World, 2001
10. UN Report,1994, 1998, 2004, 2015
11. International Labour Force, World Labour Report, Geneva, 2000.
12. Central Statistical Organisation, 2000, 2001, Elderly in India Profile and Programmes
13. NSSO 52 Round, 1999
14. NSSO 60th Round 2004
15. UN Ageing Report, 1999, 2013, 2015, 2002a
16. UNFPA, 1999 & 2012
17. US Census Bureau; An Ageing World ,2001
18. World labour Report, Geneva, 2000
19. ILO, 1942
20. World Bank. (1994) Averting the Old Age Crisis: Policies to Protect the old and Promote Growth (Washington D.C, Oxford).
21. World Bank. (2001) India: The Challenge of Old Age Income Security. Finance and Private Sector Development South Asia Region. Report No. 22034, Washington DC.
22. World Development Report (Various Issues), Oxford University Press.
23. World Health Organization (WHO) Bulletin, Geneva, 2004.
24. National Labour Institute, Report on Living Condition of Indian Workers, New Delhi, 2006.
25. National Sample Survey Organisation (NSSO) The Aged in India: A Socio-economic Profile 1995-96. Government of India, New Delhi, 1997.

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