CHAPTER 2
DEMOGRAPHIC TRANSITION AND AGEING - THEORETICAL PERSPECTIVE

2.1. Introduction

In the previous chapter, we presented the design of the study. It is customary to have a theoretical perspective as a prelude to detailed discussions. The world population has touched 6.8 billion in 2009 and is expected to reach 9.1 billion in 2050. Out of this 6.8 billion, 1.2 billion population lives in developed countries and accounts for around 18 percent of world population. Currently, the growth rate of world population is 1.18 percent per year and is projected to decline to 0.34 percent per year by 2045-2050 (UNDP, 2009). Thus demographic transition undergoes an evolutionary process. There is vast literature examining the changes of fertility and mortality and its implications and impact on population growth. The current shifts in age-composition of population led to an unprecedented rise in aged population. This gave more prominence to the study of ageing and aged population. Since the focus of this study is about the aged population in Kerala, theoretical review is restricted to two sets of theories—demographic transition theories and ageing theories.

2.2. Population Theories - A Synoptic View

The relationship between population growth and economic development has been the subject of debate among policy makers. Mercantilists and Physiocrats dealt with the issue of population increase as one which is beneficial to the society and optimises national wealth. Classical economists embedded the theory of population in general theory of development and growth. Adam Smith viewed consistently increasing population as a dependable sign of country’s prosperity. Malthus (1798) looked it from a different perspective and presented a systematic theory about population and economic development. In his ‘An essay on principles of population’, Malthus tried to establish a relationship between food production and population growth in the long run. He asserted that the power of population is indefinitely greater than the power in the earth to
produce subsistence for man. Population, when unchecked, goes on doubling itself in every 25 years or increases in a geometrical ratio, while the means of subsistence increases only in an arithmetic ratio. Malthus has strongly opposed the monetary transfers from rich to poor individuals (Bowen, 1976). Empirical analysis of the Malthusian hypothesis by Boyer (1989) pointed out that widespread allowance after 1795 appears to have a positive effect on the birth rates in the early 19th century in England. Malthus explained the relationship between population and standard of living on the eve of industrial revolution which is displayed by most of the societies in the world. He assumes an increase in spending on children as family income increases. Later Beckar (1960) pointed out that this increase can take the form of larger allocation of resources and parental time to children. But nineteenth century witnessed a substantial decline in fertility rate in industrialised countries, contrary to his predictions on population growth.

On the basis of the experiences of French population, Arsene Dumount in 1890 explains an inverse relation between socio-economic class and fertility for the first time. He argued that Malthusian theory is applicable to primitive or uncivilized societies where population grows at a geometric rate. He asserted that population in its effort to raise standard of living tend to reduce fertility rate.

In the twentieth century, mortality and fertility differentials in many countries have received attention of the researchers. Evidences of relationship that correlate population growth and socio-economic development from Western European countries like England have been synthesised in the form of a group of theories called demographic transition. The theory of demographic transition illustrates how a demographically backward society transforms into a demographically advanced society. It states that countries experiencing modernization, progress from a pre-modern regime of high fertility and mortality rate to a post modern period in which both are relatively low.

Though demographers agree that population growth in each country whether industrialised or non-industrialised, has to pass through different stages before it reaches a stable position, they differ in their views regarding the stages of population growth. Though there were several precursors like Wilcox (1916) and
Knibbs (1917) to the demographic transition theory, Warren Thompson (1929) elaborated the idea of demographic transition model. Based on the recorded changes in birth rates and death rates in different countries, he categorized the countries into three groups on the basis of population growth. Countries in North America, North and Western Europe are grouped in the first category with rapidly declining birth rate and death rate. Central and Southern European countries which show a trend of declining birth rate and death rate are included in the second category. In these countries, death rates decline more rapidly than birth rates leading to a sharp increase in population growth. The third category (group C) includes Russia, Japan and India where birth rates and death rates are less controlled compared to other two categories. He attributed the decline in fertility to social and economic forces of modern society. Fall in birth rate will depend on the speed with which their industrialisation takes place. Accordingly, one of main issues that the world is likely to face in the next decade is the readjustment of land as consequences of population shift from north Western Europe to southern Europe or certain parts of Asia. Thompson’s hypothesis was partly confirmed by the demographic evolution of the subsequent decades. During 1930’s it was discovered that Japan and Russia which he grouped together as class C nations had now become Class B countries with the onset of industrialisation (Gutman, 1960). Thompson was criticized for his theory was neither full fledged pre-demographic transition regime nor post demographic regime and has less to explain the causes of demographic change.

Landry (1934) also presented similar ideas as Thompson in ‘La Revolution Demographique’. He pointed out demographic regime as a function of material aspirations of individuals and productive potential of economic system. He postulated three stages- Primitive, intermediate and contemporary regime for establishing a relationship between food supply and population growth. Unlike Thompson, Landry presented a more detailed analysis of reasons for fertility and mortality decline. He attributed it to changes in moral order. Later Notestein (1929) along with Kingsley Davis and Dudley Kirk labeled it as ‘demographic transition’. A notable feature of Notestein theory is that he recognized the stage of completion of demographic transition on the premise of beginning of population
Notestein also visualized demographic transition in three stages (1) Pre transitional period (2) transitional period and (3) post transitional period. He felt fertility behaviour as culturally embedded and stressed the need for a change in cultural prescriptions before individual’s motives and intentions could begin to encompass fertility-controlling behaviour. He considered industrialization and concomitant urbanization as preconditions to development and stated that lower fertility could only be reached after the long term process of modernisation. He attributed transition to several socio-economic changes including loosening of the hold of traditional forces, the advance of education and rational thought, changes in the economic benefits and cost of children and the emergence of new economic roles for women (Mc.Donald, 2001).

Davis (1945) analyzing the world population trends found that those countries enjoying low fertility like the United States, Australia, New Zealand, northwestern Europe and Japan are having least illiteracy. He pointed out that fertility tends to decline during the period of modernization. It is argued that for India it is impossible to make transition from agricultural to industrial regimes without dislocating and disorganizing great section of population.

Assessing the empirical validity of demographic transition, Galor (2004) suggested that increasing the role of human capital in the production process in the second phase of industrial revolution was the central force behind demographic transition.

Karl Sax categorized the stages of demographic transition into four: (1) high stationary; (2) early explosive stage; (3) late explosive stage; (4) low stationary stage. He concentrated more on second and third stages where the problem of over population occurs. His work “Standing room only: the challenge of overpopulation” was a revival of Malthusian view. Unless there is rather speedy reduction of births, escape from mass poverty will be impossible for two-thirds of world population (Hankins, 1956).
Transition theory was criticized by Van Nort and Karon (1955) since it does not involve predictions about the demographic future of countries in the third and last category. Peterson (1960) while analyzing the demographic trends in Netherlands concluded that the accelerated rate of population increase came more from increased fertility rather than mortality decline. This is against transition theory which states that declining mortality was responsible for population increase.

Tabbarah criticised the earlier version of demographic transition theory since it gives no explanation of why the decline in birth rate took place and about the factors responsible for this decline. He (1971) formulated a demographic model on the basis of selected socio-demographic variables to study fertility trends. For assessing the stages of demographic development he derived two variables M (Maximum number of children) and C (desired number of children) and calculated the likely values of C and M in different regions. He argued that the two important variables affecting fertility trends are M and C. On the basis of its values he formulated four stages of demographic transition.

<table>
<thead>
<tr>
<th>Regions</th>
<th>Likely range of C</th>
<th>Likely range of M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black Africa</td>
<td>5-15</td>
<td>1.5-5</td>
</tr>
<tr>
<td>North Africa and Asia</td>
<td>4-8</td>
<td>2-7</td>
</tr>
<tr>
<td>Korea and Taiwan</td>
<td>3-6</td>
<td>4.5-8.5</td>
</tr>
<tr>
<td>Western Europe and North America</td>
<td>2-4</td>
<td>7.5-12</td>
</tr>
</tbody>
</table>


He observed that in black Africa where C > M couples generally desire a larger number of children. Fertility in this region is determined by biological factors; while in the industrialized countries of Western Europe and
North America, fertility is considered as a socio-economic phenomenon. In North Africa and Asia, the range of M is lower than C representing the demographic status between first and second stages. Korea and Taiwan represent the beginning of third stage and Western Europe and North America characterized the fourth stage.

According to Tabbarah, the most appropriate strategy to contain rise in fertility and expedite its decline is to minimize or delay the rise in M. For this purpose, measures to eliminate major fertility inhibiting diseases might be postponed and health measures to reduce infant mortality may be undertaken. He opined that birth control measures are useful only at the transitional periods between the second and third stages of demographic developments.

Blacker (1944) presented a more segmented and even more mechanistic version of the demographic transition theory. Blacker subdivided both the transitional phase and post transition phase of Notestein into two. Thus Blacker identifies five stages of transition which begins and ends with zero population growth. He estimated that up to 1930, about 22 percent of the world population belongs to the first stage characterized by high birth rate and death rate and 40 percent of the population in the second stage and 20 percent of population in stage three of demographic transition. During this period, all developed European countries belong to stage four characterized by low birth rates and death rates. The fifth stage is the stage of negative growth which is experienced by many developed countries. Demographers pointed out that Kerala will be likely to enter this stage by 2030 (Rajan and Zachariah, 1997). But the theory never gave an explanation for fertility change.

Cowgill (1963) argued that demographic transition is closely correlated with urbanisation and industrialisation. During transition there will be a marked shift from agrarian occupations to industrial occupations and towards urbanization of population. He suggested that transition theory should include not only trends in birth and death rates but also concomitant changes in family size, sex ratio, age composition, occupational distribution and residential pattern. He pointed out that a population experiencing secular decline in both birth rates and death rates will manifest a marked ageing trend. Bongaarts and Bulatao (1999) also noted that at
the end of transition, fertility rate will be slightly below the replacement level and population will continue to age indefinitely.

Caldwell (1976) made an attempt to integrate economic, cultural and institutional theories of fertility decline. He claimed that there is no closed relationship between economic modernization and fertility decline. He asserted that whether high or low fertility is economically rational is determined by social conditions, primarily by the direction of the intergenerational wealth inflow.

Chesnais (1990) noted that during the successive phases of demographic transition the age structure is transformed from the traditional shape of a triangle (high mortality and high fertility) to the profile of a rectangle and finally if fertility falls to sustained below replacement level with a still longer life expectancy to a trapezoidal shape, or even (in the extreme scenario of acute depressed fertility combined with very long expectation of life) to an inverted triangle. He noted that some areas of Western Europe like West Germany or northern Italy are experiencing this stage which is not taken into account in the classical theory of demographic transition. They assumed fertility to be stabilized around the replacement level. In these post transitional societies old age population deserves special attention since the caring of elderly is mainly supported by the state.

There are studies showing the association between demographic transition and economic growth. Bloom and Williamson (1998) analysed demographic transition comparing the experiences of Western Europe and Asia. Demographic transition in East Asia has been much faster than it was in 19th century Europe. The demographic transition in Europe evolved over 200 years. Later Bloom et al (2001) examined the demographic transition in five specific areas of the world – East Asia, Latin America, Japan, Middle East and North Africa and Sub-Saharan Africa and came with similar results. Demographic trends show that Middle East and North African countries are in the much early stage of demographic transition while Japan illustrates the back end of demographic transition. The East Asian nations demographic transition has experienced the most success occurred with relative rapidity, over a 50 to 75 year period- the fastest demographic transition to date.
Lehmijoki and Paakkonen (2009) assessing the role of demographics on post-war growth classified the countries into three clubs- Club I, Club II, Club III. These three clubs were identical to the Malthusian, Post Malthusian and Modern club suggested by Galor and Weil (2000). Their analysis show that only six countries still stay in club I (Zambia, Malawi, Burundi, Mozambique, Guinea-Bissau, Cote d'Ivoire) and twelve in Club II (Kenya, Tanzania, Uganda, Mali, Ethiopia, Congo, Niger, Chad, Guinea, Burkina Faso, Cameroon, Benin ), while all other countries (67 countries including U.K, U.S.A, Japan, Sweden, Italy, France etc ) have proceeded to Club III.

Discussions about the demographic behaviour of most of the countries of Western Europe and other industrialised countries today has resulted in developing a concept named Second Demographic Transition (SDT). The SDT suggested that liberalism and freedom from traditional forces of authority particularly religion and growth of personal preferences have significant influence in determining social and economic behaviour. On the basis of significant changes happened in the field of fertility and family formation by Ron Lesthaeghe and Van De Kee developed the term Second Transition for the first time in 1986. The focus of the theory was on the changes like decline in marriage formation, an increase in non-martial cohabitation, a general decrease in fertility but an increase in non-martial child bearing, an increase in union and disruption and a postponement of marriage and child bearing (Hoem et al, 2009) . The theory argues that modern prosperity, education have replaced traditional societal norms and demographic change is closely linked to ideational sifts towards more post modern, individualistic and post-materialistic value orientations and as a consequence, family forms and fertility behaviour are becoming increasingly diverse within cohorts (Billari and Kohler, 2002).

Kaa (2002) observed that the new demographic behavior characterizing SDT are spreading slowly in Southern Europe and Japan than in Western or Northern Europe. In Southern Europe and Japan cohabitation, divorce and extra-martial fertility are rare or risen barely. On the basis of data from National Gender and Generations Surveys of Russia, Romania, Bulgaria and Hungary Hoem et al
(2008) found traces of SDT. They studied the rates of entry into marriage and non-marriage union. In Bulgaria and Hungary, the rates of non-martial union have increased by early 1980’s and in Russia and Romania in 1990’s. The gender revolution and evolution and the accompanying increase in female work participation rate has resulted a rise in mean age at first parenthood, high divorce rate leading to a reduction in childbearing and an increase in the share of childless women. Later Lesthaeghe and Neels pointed out that postponement of parenthood was spreading rapidly in Southern Europe as well and in 1990’s fertility was pushed down to record low levels in Central Europe. This has resulted in long term sub-replacement fertility which is a characteristic of SDT.

In the above paragraphs, we presented different theories and approaches on demographic transition. But its validity across countries depends on many factors. The succeeding paragraphs examine the empirical evidences

2.3. Empirical Evidences –Demographic Transition

It is believed that the transition theories were formulated on the basis of actual demographic experiences of European countries. Before 19th century Europe was in the phase one of demographic transition with the natural rate of growth of population at a lower level (0.5 percent per year). The process of demographic transition occurred during 1800 in Europe when mortality rate started to decline (Lee 2003). The industrial revolution and the social and cultural changes that accompanied have made the European countries to reach the second stage of demographic transition, in the first quarter of the 19th century. Substantial progress achieved in providing medical facilities, better hygiene and availability of food has contributed to a reduction in mortality rate. About 60 percent of mortality decline in Western Europe happened during 1870-1900 (Caldwell, 2000). Since religious and cultural practices affecting fertility needs a longer time to change, fertility decline lags mortality decline during this period. Caldwell and Schindlmayr (2003) show that very low fertility rate (1.5) was achieved by Central Europe in the early 1980’s, Southern Europe by late 1980’s and in Eastern Europe in1990’s, while Sweden, Britain and Belgium have achieved the range of 1.6 -1.9 at the end of twentieth century. It is noted that fertility was always higher in America than in Europe both before and during the transition (Reher, 2004).
Coale (1986) analysed the effect of continued low fertility on US population from 1980 to 2100. His projections indicate that with replacement fertility (TFR=2.07) the United States population would stabilize at a little more than 25 percent above its 1980 size before 2050. With the net immigration of 700,000 per year, it would be nearly three-quarters again as large in 2100 as in 1980. The lowest fertility projection (TFR=1.4) would produce a population only one-third as large as in 1980 by the end of 2100 and a population of about five-eights as large as in 1980, if immigration occurred at the same rate. He pointed out very high proportion of population aged 65 and above as the most conspicuous features of low fertility.

Galor (2004) observed that rather than decline in infant and child mortality, fertility decline happened in Europe due to increase in income per capita. This suggests the need for a third force in transition. While Cochran and Kane (1977) noted that in Western Europe, late marriages and high proportion of celibacy proved to be highly effective in limiting fertility. However a difference is noticed among countries regarding the determinants of fertility decline. Chesnais from the experiences of developed and developing countries noted that fertility decline has been preceded by a substantial increase in income per head and also female education (Henripin, 1989). The transition occurred in developing countries is different from developed countries. Lee and Wang Feng (1999) observed that Chinese demographic transition is the product of the transfer of the collective decision- making process from the family to the state which is different from the stylized Western transition. In European transition the state opposed fall in fertility in European countries. Study by Sachs et al (2007) suggested that fertility in Africa has been driven more by child mortality than socio-economic status. Rajan (1996) points out from the experiences of Kerala, Tamil Nadu and West Bengal that political transition to a certain extent has influenced demographic transition of a state. A study by Lele and Michael (1992) shows that investment in education and social sectors may be given priority for reducing fertility by citing the case of Sri Lanka and Kerala.
Lesthaeghe (1983) argued that differences in fertility across societies arose largely from differences in religious belief and the differences in secularism, materialism and individualism. Khan and Lutz (2007) also pointed out that culture and politics matter a great deal for the specific paths of fertility and mortality.

Zarate (1967) has questioned the prediction made by demographic theory that fertility is associated with urbanization and economic development. A study by Benefo and Schultz (1996) in Ghana and Cote d’Ivoire pointed out that fertility responds directly to child mortality, but by a lesser amount than in East Asia. Economic growth with out structural changes is not likely to contribute to fertility decline.

**Table 2.2**

**Region- Wise Percentage Distribution of World Population from 1750-2050**

<table>
<thead>
<tr>
<th>Regions</th>
<th>1750</th>
<th>1850</th>
<th>1900</th>
<th>1950</th>
<th>2010</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia</td>
<td>63.5</td>
<td>64.1</td>
<td>57.4</td>
<td>55.6</td>
<td>60.3</td>
<td>59.1</td>
</tr>
<tr>
<td>Africa</td>
<td>13.4</td>
<td>8.8</td>
<td>8.1</td>
<td>8.8</td>
<td>15.0</td>
<td>19.8</td>
</tr>
<tr>
<td>Europe</td>
<td>20.6</td>
<td>21.9</td>
<td>24.7</td>
<td>21.7</td>
<td>10.6</td>
<td>7.0</td>
</tr>
<tr>
<td>Latin America &amp; Caribbean</td>
<td>2.0</td>
<td>3.0</td>
<td>4.5</td>
<td>6.6</td>
<td>8.5</td>
<td>9.1</td>
</tr>
<tr>
<td>Northern Europe</td>
<td>0.3</td>
<td>2.1</td>
<td>5.0</td>
<td>6.8</td>
<td>5.1</td>
<td>4.4</td>
</tr>
<tr>
<td>Oceania</td>
<td>0.3</td>
<td>0.2</td>
<td>0.4</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>World</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>


Earlier Europe contributed around 25 percent of world population. Now these regions are contributing around 11 percent of world population (table.2.2). Recent fertility trends in the developed countries show a divergence in fertility levels. North-Western European countries like U.K, France and Norway with Total Fertility Rate (TFR) ranges from 1.8 to 1.9 forms first group. In these countries total population is increasing at a rate of 15-20 percent and aged population is increasing at a rate of 16 percent and likely to increase at a rate of 25
percent or more in future. Germany, Austria and Southern Europe comprise second group with low TFR 1.4 or less. These countries are facing a population decline with rapid population ageing. Third group comprises of Eastern European countries like Poland, Hungary and Czech Republic are the worst affected with lower birth rate and emigration that threaten depopulation (Coleman, 2007). It is also observed that reduction in fertility is accompanied by increase in permanent infertility, rise in age at marriage and high life expectancy (Sardon, 2004). As a result of these trends, age structure of the population in these countries has skewed leading to increase in aged population. Severe labour shortages, extremely rapid population ageing, intense migratory pressure and difficulties in maintaining pensions and other systems of social welfare are the major challenges faced by these countries (Reher, 2004). Japan is one of the worst affected countries from the point of view of labour shortages. From 2000-2025, the number of Japanese workers is expected to decline by 20 percent while young workers in USA, are expected to increase by 10 percent (Zachariah, 2001). Bourgeois and Pichat (1981) predicted that after 2050 the total fertility rates in European countries are likely to increase to replacement level.

Unlike the European countries, the developing countries in Asia and Africa are in varying stages of demographic transition from high to low rates of mortality and fertility. It is seen that until 1950, rate of population growth in Asian countries was less than one percent. The transition occurred in Asia with a decline in mortality rate in 1950’s with population growth rate increased to 2 percent per year. It is found that it took 75-100 years in Northern Europe to complete mortality transition while it was achieved with in shorter periods in developing countries. Most of the countries in Asia like Maldives, Pakistan, Tajikistan etc were in the second stage demographic transition with high population growth rate. Two Asian countries, India and China alone constitute 40 percent of the world population. The experiences of China show that powerful government interventions can bring fertility down to replacement level (Kirks, 1996). The family planning policy in 1960’s has brought an unprecedented drop in China’s fertility in 1970’s. There are uncertainties regarding the completeness of demographic transition in china. Analysing the Chinese demographic transition in
terms of fertility, age structure, urbanization and family transition, Jianjun ji (2003) observed that the transition process is still underway. Though James (2008) observed that though India is currently having demographic bonus as a result of age transition in favour of working age population, it is doubtful that whether the country will be able to take advantage of the situation due to its backwardness in education, health and employment opportunities. Chandrasekhar, Jayati Ghosh et al (2006) suggested that there exist strategies to exploit the demographic window of opportunity that India is having. Emphasis on liberal and open door policies and excessive fiscal prudence may result in wasting of the opportunities offered by country’s demographic transition.

While comparing the demographic status of Asia and other developing countries like Europe, it is found that transition was more rapid in these countries than in Europe. Oechsli and Kirk (1975) indicated that in earlier demographic transition, the mortality decline was slow enough that it has not been completed by the time fertility began its decline. In the case of new transition, in Latin American and Caribbean countries, the mortality decline was so rapid that it reach a low level before fertility decline begins. This long lag between the fall in mortality rate and fertility rate has led to a situation of population explosion in many developing countries. Though birth rates started declining it is still higher than those in pre-industrial Europe. The transition in European countries occurs as a result of industrialization. As a result, these countries have achieved a high level of social and economic development, while reaching the final stage of demographic transition. On the other hand, in spite of low level of modernization, introduction of effective family planning programmes, female education etc contributed to decline in fertility in the developing countries. Komine and Kabe (2009) projected that in the next fifty years, Asian countries will follow the same sequence of demographic change that Japan had undergone namely a declining total fertility rate leading to an ageing society followed by shrinking their labour force and total population. Such changes can be interpreted as a shift from demographic bonus to demographic onus (quoted from Takatoshi, Kojima et al (2009).
There are countries which are still in the early stages of transition experiencing high total fertility rate and population growth rate. Afghanistan, African countries like Cameroon, Egypt, Madagascar, Mali and Nigeria are in the early stages of demographic transition with TFR ranges from 3.4 to 7 children per women. The main challenge before government is to provide educational facilities to the children and employment to the labour force. Gaisie (1996) opined that demographic transition theory is inadequate to explain social changes and offer guidelines for monitoring and understanding structural changes in future in the African social systems. Many dimensions of pluralism together with cultural conservatism and resilience make African societies more complex and diverse than those in other parts of the world.

Discussions above show that the pattern of demographic transition in the countries is different, though it occurred at the same time period. In the process of demographic transition, while majority of the countries passed through 3 phases, countries like Japan and Russia skipped phase 2 and reached third phase of transition. But Kammeyer (1970) claimed that Japan’s case is also consistent with demographic transition theory.

Theoretical discussions so far made it clear that most of the demographically successful countries are now experiencing the problem of ageing. The continual rapid growth of the elderly in developed and developing countries has been widely seen as a crisis and threat to society and thus received the attention of researchers and policy makers. There is increasing concern that too little attention is paid to the development of theories (Bengtson, Burgess and Parrott, 1997). Bengston Rice and Johnson (2000) observed that theories that attempt to explain ageing as a general process are often oversimplified, and thus subsequently disregarded. Hence there is no successful general theory in ageing.

2.4. Theories of Ageing

Thoughts and theories of ageing have a very long tradition in human history. Hebrew and Christian scriptures offered insights about the wisdom and suffering associated with grey hairs. Aristotle may have been the first to codify theories of age (Bengtson et al, 2009). Ageing in human beings is a
multidimensional process including physical, psychological and social change. Thus a study of ageing includes different perspectives like the biological, the psychological and the social perspective.

Biological approach to ageing is concerned with anatomic and physiological changes occurring with age. They refer ageing as ‘senescence’. Hamilton claimed Senescence, referred as deterioration in the functioning with age, as an inevitable process (Baudisch, 2008). Since this study is not related to biological issues of ageing, only a few major theories are mentioned.

Free radical theory developed by Denham Harman in 1956 is most popular theory of ageing. He referred ageing as a result of oxidative metabolism. According to free radical theory, a molecule has a free electron and this property makes it react with healthy molecules in a destructive way. The metabolic waste created by free radicals damage cell structure, Deoxyribonucleic acid (DNA) and Ribonucleic acid (RNA) leading to diseases such as diabetes, arthritis and lipid per oxidation. Wear and tear theory proposes that cell’s inability to repair damaged DNA keeps cardiac muscle, neurons, striated muscle and brain from regenerating after being destroyed by wear and tear. Later Dilman and Dean elaborated the theory by focusing on the neuroendocrine system. Their theory named neuroendocrine theory, suggests that as a person gets aged the hypothalamus loses its regulatory ability and the receptors which take up individual hormones become less sensitive to them.

Programmed ageing theory proposes that as a person gets aged cells ability to get divide is limited due to the shortening of telomere. This phenomenon was first discovered by Hayflick and is also known as Hayflick limit theory. This may be an important mechanism for ageing in tissues like bone marrow and the arterial lining where active cell division is necessary.

The modern biological theory named cross linkage theory, suggests that accumulation of certain cross linked compounds will affect the normal functioning of body cells. In this theory, it is the binding of glucose to protein that causes various problems. Living a longer life is going to lead to the increased possibility
of oxygen meeting glucose and protein. Common cross-linking disorders include senile cataract and the appearance of tough, leathery and yellow skin.

The social perspective theories of ageing are classified into micro-level and macro-level theories. Theories of ageing at micro-level include Role theory, Disengagement, Activity and Continuity theory. Macro-level theories of ageing include Age Stratification, Subculture of Ageing and Modernisation theory.

2.4.1. Role Theory

Role theory is one of the earliest theories of social gerontology developed by Phillips (1957) and Cottrell (1942) which explains how older people adjust to changes and losses in social roles. The theory postulates the existence of social roles an individual play throughout their life and there occur a change in these roles as they get aged. Adjustment to such a role change is the most determining variable to successful ageing. Though this role loss is evident in other phases of life cycle, it is found that people suffer more from role loss as become old. The relationship between role loss and adjustment to old age is substantiated by several studies. For instance Cavan (1952) observed that role losses with widowhood and retirement from employment may feel elderly neglected and experience a decline in their status.

2.4.2. Disengagement Theory

Disengagement theory is the first formal theory of ageing put forward by Cumming and Henry (1961). The theory posits that independent of other factors such as poor health or poverty, ageing involves a gradual but inevitable withdrawal or disengagement from interaction between the individual and his or her social context. The theory was based on a study conducted in Kansas City from a small sample of two groups of men and women aged 50 to 70 years and aged over 70 years. The study found a tendency for social interaction to decrease among elderly aged 70 and above. From this sample, they generalised disengagement to be a universal theory.

Cumming and Henry argued that ageing could not be distinctly understood from the characteristics of social system. This theory is based on the following
assumptions. (1) Disengagement is a life long process and takes place over a period of time. (2) Disengagement is inevitable because death and biological decline are inevitable though the nature and timing of disengagement will vary between individuals, historically and culturally. (3) Disengagement is seen as adaptive for both society and the individuals. It is assumed that withdrawal for individuals means a release from social pressures that stress productivity and continued achievement. Thus disengagement implies triple loss for the individual: a loss of roles, a restriction of social contacts and relationships and a reduced commitment to social morals and values, while this withdrawal permits younger generation to take over the roles that need to be filled. Thus for society, disengagement is a mechanism for ensuring equilibrium within society and the transition of social power across generations. This mutual withdrawal is necessary for the orderly continuation of society and for successful ageing. Acceptance and the desire for a process of disengagement from active life are indicated as a pathway to successful ageing. The degree of life satisfaction of elderly is associated with the amount of reduction of the number and importance of their roles. Hochschild (1975) redefines disengagement and proposes new structural determinants for it. Ageing is a biological process and disengagement is a social process affected by socio-economic conditions. It is not ageing that determines disengagement but a combination of factors associated with ageing (poor health and widowhood).

2.4.3. Activity Theory

On the basis of a study conducted in Kanas city among 300 people aged 50 to 90 years, Havinghurst (1963) developed activity theory of ageing. He argued that activity and engagement offer the path to successful ageing. He developed this theory on the basis of two assumptions. First, morale and life satisfaction are positively related to social integration. Second, role losses such as widowhood or retirement are inversely correlated with life satisfaction and such losses need to be compensated by substitution of compensatory activities. The central idea of theory is that older persons who are engaged in productive activities and have social network are more likely to be satisfied than less active persons.
Knapp (1977) found activity theory relevant among the sample elderly in south of England. Later, Longino and Kart (1982) extended a strong support to activity theory of aging. Their findings suggest that informal activity would exert a positive effect on the life satisfaction of elderly. Subsequent researchers (Okamoto, 2008) also confirm this. This theory provides guidelines about the caring of older people. Wadensten (2006) pointed out that in Sweden’s official documents and law on social care of older people offers elderly an active life together with other people. This is a clear evidence for the influence of activity theory in caring of older people.

2.4.4. Continuity Theory

Continuity theory is the formal elaboration of activity theory using a life course perspective. In the course of growing older, Havens (1968) pointed out that the individual’s past experiences, decisions and behavior will form the foundation for their present and future decisions and behaviour. According to this theory, successful ageing depends on the individual’s ability to maintain his previous life style and behavior. Later Atchley (1989) developed the theory to explain the development of internal and external structure of continuity. Internal continuity occurs when one wants to preserve some aspects of oneself from the past so that the past is sustaining and supporting one’s new self. External continuity involves maintaining social relationships, roles and environment. Thus continuity is a grand adaptive strategy that is promoted by both individual preference and social approval. Life satisfaction is high up to the level where both internal and external continuity are maintained. Covey (1981) has re-conceptualised continuity theory with three propositions: (1) as the person’s resources and ability increase, the ability to continue in social roles increases; (2) as the restrictiveness of the social structure declines, the ability of social structure to maintain and continue desired social roles increases; (3) people with more rewarding social roles to surrender these roles. Since each individual’s pattern of adjustment in old age is different, it is difficult to develop a general theory from this perspective. Onega and Tripp-Reimer (1997) show that since it incorporates
life course perspective, continuity theory is of great use in clinical nursing in providing care to elderly.

2.4.5. Conflict Theory

Conflict theory emerged as a response to the social turmoil in the United States and Europe. The theory dates back to 19th century writings of Marxian theory. He believed that there exists a conflict between haves and have-nots in any social system. This theory is used to explain the status of aged in the society. Concentration of economic power with in specific groups especially among youth led to the marginalization of aged which results in social conflict. Turner (1998) pointed out that generational conflict is structurally organized around the tension between early retirement, age-related competency, legislation on ageism and youth unemployment. Neo-Weberians take a more expansive view of social conflict by including social status and ideology along with economic power. Later walker (1981), Minker and Estes (1984) assumed that social class is a structural barrier to older people’s access to valued resources and that dominant groups within society try to sustain their own interests by perpetuating class inequalities (quoted from Srivastava,2010). The political economy approach of ageing defines old age as the relationship between older people and means of production in general and social policy in particular. It is the unequal nature of economic relationships that determines not only who grows old but also the social and economic consequences of old age. Walker (1980) argued that in U.K many policies have actively contributed to poverty and dependence in old age. Olson (1982) considers the status of ageing population in the United States and suggests that caring of elderly has become a problem due to the impact of inflation on personal savings and care schemes (Sen, 1994). Political economy theorists have criticized the high cost and declining quality of health care faced by the aged population and pointed out that both government and private sector should collaborate for protecting their own interest.

Researchers have also focused on the relationship between environment and individual leading to another perspective on ageing named interactionist approach. The major theory following this approach was Symbolic
Interaction theory developed by Mead (1956). This theory assumes that there is continuous interaction between individual and his social environment and in the process individuals construct social worlds or reality. In other words, ageing experience is influenced by the specific situation and background in which elderly live. According to this theory all individuals with their features and characteristics become the symbol of their respective age groups for others. Bengtson (1973) proposed a new theory named labeling based on symbolic interaction theory. The theory assumes that when an individual is labeled it has a significant impact on the attitude and reactions of others towards them. The behaviour of older persons depends on the reactions of others in his or her social environment. Once labeled, the individuals are forced to act their specific roles or identity. Later, exchange theory provides a detailed explanation of individual behaviour in a particular situation. Mauss presented the idea of individual behaviour as exchange for the first time in 1954. This theory views all human interactions as an exchange of resources either real or symbolic and most powerful actor benefit from exchange (John, 1984). Problems of ageing are seen as problems of decreasing power resources. Because of this, older persons become increasingly unable to enter into balanced exchange relations with other groups with whom they interact. From this view, the process of disengagement is mainly due to the series of exchange relations in which the relative power of aged deteriorates (Dowd, 1975).

2.4.6. Age Stratification Theory

Age stratification perspective formulated presented a systematic approach to explain the relationship between ageing and social change. Unlike the earlier theories, modernization and age stratification theories have moved away from an individualistic approach towards a macro-level approach. Ageing is defined as that special type of mobility of individuals from one age stratum to the next. Unlike mobility between class strata, ageing is inevitable and universal (Foner 1974). Age serves as a basis of society’s division of labour, through age-related roles. According to this theory, individual’s perception on health may differ depending on their age cohorts. Cockerham, sharp and Wilcox (1983)
examining this found that those persons belonging to age group above 60 tend to perceive their health in a more positive fashion than young age group.

2.4.7. Sub Culture Theory of Ageing

For empowering aged, Rose has argued that older people will interact more frequently with other older people than with younger generations, thus forming a subculture with similar experiences, life styles, values and behaviour. Rose identified a number of demographic, ecological and social variables (exclusion of older people from labour market, their dependence upon others for economic needs etc) that constitute sub-culture. Interaction between elderly groups will increase group consciousness and enhances social bonding based on age.

2.4.8. Modernisation Theory

Earlier Simmons, the famous anthropologist in his classic ‘The role of aged in primitive societies’ (1945) presented evidences to establish that high status of the elderly was not guaranteed in primitive societies. His work pointed out that the treatment of elderly varied widely in different tribal settings on the basis of technological differences. In short, he pointed out an association between status of aged and the process of modernization. Later Durkheim’s study (1964) reveals similar findings that link marginalization of elderly to modernization. Cowgill and Homes (1972) developed these ideas further. They conducted a cross-cultural study analyzing the status of elderly in 14 different societies ranging from gerontocratic tribe in Ethiopia to highly industrialised United States. The process of modernization in their study was defined using four parameters (improvement in medical technology, the application to the economy of science and technology, urbanization and mass education) and changes in these variables contributed to a decline in the status of elderly. According to this theory, population ageing, occurred as a result of improvement in health care is a major critical variable for the marginalization of elderly. Cowgill postulated that the role and status of the aged varies systematically with degree of modernisation of society.
Palmore and Mauton (1974) analysed the status of elderly in 31 countries and observed a U shape relationship between elderly’s status and modernisation. Their study results show that though at the start of modernization, elderly’s status was low but it may improve as economic development proceeds. Rhoads (1984) analysed the effect of modernization on the aged in terms of Cowgill’s variables. He came out with slightly different findings. His study found that rapid societal change in recent years has not eroded the status of elderly. He suggested culture as the most intervening factor in ageing and modernization theory. Later Hassen (2007) studied the implications of this theory in Bangladesh. He pointed out that modernization theory is not totally fit for developing countries. He observed that though the impact of modernization is intense, family still plays role in caring for elderly people. Mc Conatha and Jasmin (2007) also came with almost similar results from China, though they raised concern in the elderly position in future. In his study Hendricks (1982) points out that the need to recognize the structural imperatives that shape their control over potential resources for upgrading quality of life of elderly.

2.5. Conclusion

Theoretical review of demographic transition theories shows that these theories focused heavily on identifying the conditions leading to the onset of transition and very little upon its progression. Evidences related to demographic transition show that changes in the size and age structure of population has made countries to be at various stages of demographic transition. It is observed that most of European countries where transition occurred initially were now facing the problem of low fertility. Severe labour shortages, extremely rapid population ageing, intense migratory pressure and difficulties in maintaining pensions and other systems of social welfare are the major challenges faced by these countries. Compared to European countries, transition is more rapid in developing countries. Thus the problems currently experiencing by developed countries are likely to come in developing countries in near future. Though ageing is currently a burning problem in developed countries, surprisingly, little attention is paid by researchers to develop a general theory which throws light on various dimension of ageing.
There are many areas which need to be addressed to enhance our understanding of processes and consequences of population ageing. One such dimension is the living arrangement of elderly and social security of the aged, which is the focus of this thesis.

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