ACTIVE AGEING IN KERALA: DIMENSIONS AND DETERMINANTS

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By

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CERTIFICATE

This is to certify that the thesis entitled " **Active Ageing in Kerala : Dimensions and Determinants**", submitted by **Mr. RAMADAS M**, to the University of Calicut, for the partial fulfilment of the requirements for the award of the degree of Doctor of Philosophy (Ph.D.) in Economics, is a bonafide research work done by **Mr. RAMADAS M** under my supervision and guidance in the Research & Post Graduate Department of Economics, Mar Dionysius College (Affiliated to University of Calicut), Pazhanji, Thrissur, Kerala The content embodied in this Thesis, in full or in parts, have not been submitted to any other University or Institute for the award of any degree. Plagiarism is checked and found within the permitted limits.

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DECLARATION

I hereby declare that the work presented in the thesis entitled "Active Ageing in Kerala: Dimensions and Determinants" is based on the original work done by me under the guidance of Dr.G. Rajeev and has not been included in any other thesis submitted previously for the award of any degree. The contents of the thesis are undergone plagiarism check using iThenticate software at C.H.M.K. Library, University of Calicut, and the similarity index found within the permissible limit. I also declare that the thesis is free from AI generated contents.

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Ramadas M

ABSTRACT

This study explores the concept of active ageing among older adults in Kerala, the Indian state with the highest proportion of elderly people. As the ageing population continues to grow, it becomes important to understand the key factors that support healthy and active ageing. The research is based on the World Health Organization's (WHO) framework for active ageing. This framework focuses on three main areas: health, participation, and security. To study this, data was collected from 720 elderly individuals in the Ernakulam district of Kerala. The participants were selected using a systematic random sampling method. The study used statistical tools, including Ordinary Least Squares (OLS) and Ordered Probit models, to analyse the data. It created seven composite indices based on the different dimensions of the WHO framework to assess their impact on how`` the elderly perceive their own ageing. The findings show that gender plays an important role in active ageing. Women, in particular, are more affected by poor health services, weak social support systems, and poor economic conditions. In addition to gender, factors such as religion and other socio-economic characteristics also influence active ageing. Positive factors that help promote active ageing include access to good health care, strong social support, and a safe physical environment. On the other hand, financial difficulties and behavioural problems are found to have a negative impact. The study also reveals that older people experience the different dimensions of ageing in unique ways, which affects their overall social and economic well-being. Based on these findings, the thesis suggests the need for a long-term care system. This system should aim to improve both the mental and physical health of the elderly and be designed in line with their self-reported experiences of ageing.

Keywords: Active ageing, elderly, Kerala, WHO framework, Socio-economic factors, gender differences, health, social security, policy recommendations.

സംഗ്രഹം

കേരളം ഇന്ത്യയിലെ ഏറ്റവും കൂടുതലായ വൃദ്ധജനസംഖ്യ ഉള്ള സംസ്ഥാനം ആണെന്ന് കണ്ടുവരുന്നു. കേരളത്തിലെ വൃദ്ധജനസംഖ്യ ദിനംപ്രതി വർധിച്ചുകൊണ്ടിരിക്കുകയാണ്. അതിനാൽ തന്നെ, വൃദ്ധജനങ്ങൾ ആരോഗ്യത്തോടെയും സജീവമായും ജീവിക്കാൻ സഹായിക്കുന്ന പ്രധാന ഘടകങ്ങൾ മനസ്സിലാക്കുന്നത് വളരെ പ്രധാനമാണ്. ഈ പഠനം ലോകാരോഗ്യ സംഘടന (WHO) രൂപകൽപ്പന ചെയ്ത *ആക്ടീവ് എജിംഗ്* (Active Ageing) ഘടകങ്ങളുടെ അടിസ്ഥാനത്തിൽ നടക്കുന്നു. ഈ ഘടകങ്ങളിൽ ആരോഗ്യപരവും, പങ്കാളിത്തവുമുള്ളതും, സുരക്ഷിതത്വവുമായ മൂന്ന് പ്രധാന മേഖലകളാണ് ഉൾപ്പെടുന്നത്. പഠനത്തിനായി എറണാകുളം ജില്ലയിലെ 720 വൃദ്ധജനങ്ങളിൽ നിന്ന് ഡാറ്റാ ശേഖരിച്ചു. ഇതിനായി സിസ്റ്റമാറ്റിക് റാൻഡം സാംപ്ലിംഗ് എന്ന ശാസ്ത്രീയ രീതിയാണ് ഉപയോഗിച്ചത്. ശേഖരിച്ച വിവരങ്ങൾ ഒ.എൽ.എസ് (OLS) മോഡലും ഓർഡേർഡ് പ്രൊബിറ്റ് (Ordered Probit) മോഡലും ഉപയോഗിച്ച് വിശകലനം ചെയ്തു. ലോകാരോഗ്യ സംഘടനയുടെ ഘടകങ്ങൾ അടിസ്ഥാനമാക്കിയുള്ള ഏഴ് കോമ്പോസിറ്റ് സൂചികകൾ രൂപപ്പെടുത്തി, വൃദ്ധജനങ്ങൾ അവരുടെ എജിംഗ് നിലയെ എങ്ങനെ കാണുന്നു എന്നതിനെ ഇവ എങ്ങനെ ബാധിക്കുന്നു എന്നത് പഠിച്ചു. പഠനത്തിൽ നിന്ന് ലഭിച്ച പ്രധാന കണ്ടെത്തലുകളിലൊന്ന് ലിംഗഭേദമാണ്. സ്ത്രീകൾക്ക് അപര്യാപ്തമായ ആരോഗ്യ സേവനങ്ങൾ, സമൂഹപരമായ പിന്തുണയുടെ കുറവ്, ദാരിദ്ര്യം എന്നിവ കൂടുതലായി ബാധിക്കുന്നു. ലിംഗഭേദം കൂടാതെ മതം പോലുള്ള മറ്റു സാമൂഹ്യ-സ4മ്പത്തിക (socio-economic) ഘടകങ്ങളും സജീവമായ പ്രായമായിരിക്കൽ (active ageing) നിലയെ ബാധിക്കുന്നു. ആരോഗ്യ സേവനങ്ങൾ, നല്ല സാമൂഹിക പിന്തുണ, സുരക്ഷിതമായ ഭൗതിക പരിസ്ഥിതി തുടങ്ങിയ ഘടകങ്ങൾ വൃദ്ധജനങ്ങൾക്കു നല്ലതായ പ്രഭാവം ചെലുത്തുന്നു. എന്നാൽ സാമ്പത്തിക ബുദ്ധിമുട്ടുകൾ, പെരുമാറ്റ സംബന്ധമായ പ്രശ്നങ്ങൾ എന്നിവം മോശമായ ഫലങ്ങൾ നൽകുന്നു. വൃദ്ധജനങ്ങൾ ആക്ടീവ് എജിംഗ് എന്ന ആശയം വ്യത്യസ്തമായി അനുഭവപ്പെടുന്നു എന്ന് പഠനത്തിൽ വ്യക്തമാകുന്നു. ഇത് അവരുടെ സാമൂഹികവും സാമ്പത്തികവുമായ ക്ഷേമത്തെ ബാധിക്കുന്നു. അതിനാൽ, വൃദ്ധജനങ്ങളുടെ മാനസികവും ശാരീരികവുമായ ആരോഗ്യം മെച്ചപ്പെടുത്തുന്ന ദീർഘകാല പരിപാലന സംവിധാനങ്ങൾ (long-term care systems) ആസൂത്രണം ചെയ്യേണ്ടതുണ്ടെന്ന് പഠനം നിർദ്ദേശിക്കുന്നു. ഈ സംവിധാനങ്ങൾ വൃദ്ധർ സ്വയം വിവരിക്കുന്ന അനുഭവങ്ങളെ അടിസ്ഥാനമാക്കിയായിരിക്കും രൂപപ്പെടുത്തേണ്ടത്.

കീവേഡുകൾ: ആക്ടീവ് എജിംഗ്, വയോധികർ, കേരളം, ലോകാരോഗ്യ സംഘടന രൂപകൽപ്പന ചെയ്ത ഘടകചട്ടം, സാമൂഹ്യ-സാമ്പത്തിക ഘടകങ്ങൾ, ലിംഗ വ്യത്യാസങ്ങൾ, ആരോഗ്യം, സാമൂഹിക സുരക്ഷ, നയ നിർദേശങ്ങൾ.

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ABBREVIATIONS

ADL	-	Activities of Daily Life
CBR	-	Crude Birth Rate
CDR	-	Crude Death Rate
IGNOAPS	-	Indira Gandhi National Old Age Pension Scheme
IMR	-	Infant Mortality Rate
IPSrC	-	Integrated Programme for Senior Citizens
NGO	-	Non Governmental Organisations
NPHCE	-	National Programme for Health Care of the Elderly
OLS	-	Ordinary Least Squares
O-Probit Models	-	Ordered Probit Models
SPSS	-	Statistical Package for the Social Sciences
STATA	-	Statistics and Data
TFR	-	Total Fertility Rate
UNDESA	-	United Nations Department of Economic and Social Affairs
UNECE	-	United Nations Economic Commission for Europe
UNESCAP	-	United Nations Economic and Social Commission for Asia and the Pacific
UNFPA	-	United Nations Population Fund
WHO	-	World Health Organization

CHAPTER I

INTRODUCTION

1.1 Introduction

Recently, ageing of world population has undergone some sweeping changes. As ageing is a universal reality, we can't escape out of this. In recent years, the concept of ageing, far from the paradigm of the deterioration in the functional capacity of the individual, has centered around on successful ageing as multidimensional incorporating social, physical and psychological health (Phelan et al., 2004). By 2050, the proportion of elderly is expected to shot up to roughly 22 per cent and that the aged will outnumber children who are below 15 years of age (UNFPA 2017)[1]. The trends in population ageing worldwide would further and by the year 2050, Latin America, Africa, Asia, and the Caribbean would be home to 82 percent of the world's elderly (UNFPA, 2017). The United Nations has defined an older adult, as an individual over the age of 60 years. In India in the Maintenance and Welfare of Parents and Senior Citizens Act, 2007, senior citizen means "any person being a citizen of India, who has attained the age of 60 years or above". While in the developed world, those who are aged between 60 or 65 are supposed to be aged and it is construed to be the beginning of old age. However, in developing countries, old age is supposed to begin when vital involvement and active participation cease to exist (Gorman, 1999). However, in refugees, traumatic experiences exert a baneful influence on their health and nutritional attainment, and they succumb to faster ageing compared to settled populations (Atwell et al., 2007). In the year 2011, India accommodates a population of 1.21 billion people being is the second most populous country in the world, only to China. So, India found herself in the bracket of an ageing country. Approximately 60-75% of older cohorts are financially dependent on others viz children. Even the pensioners feel that they have a poor economic status post-retirement (Mahajan and Ray, 2013). Of the 7.5%

[1] United Nations Population Fund(2017): Caring for Our Elders: Early Responses, India Ageing Report 2017

of the population who are elderly, two-thirds live in villages and nearly half are of poor socioeconomic status (Lena et al., 2009). Of the minority (2.4%) of the elderly living alone, more are women (3.49%) than men (1.42%) (Rajan and Kumar, 2003). Thus, the majorities of elderly reside in rural areas, belong to low socio-economic status, and are dependent upon their families. There are empirical research that as society brings out a sea change in the process of ageing, life at later stage, also spawns metamorphosis (Phillipson, 1998; Gilleard and Higgs, 2000; Vincent, 2003).

1.2 From Ageing to Active Ageing

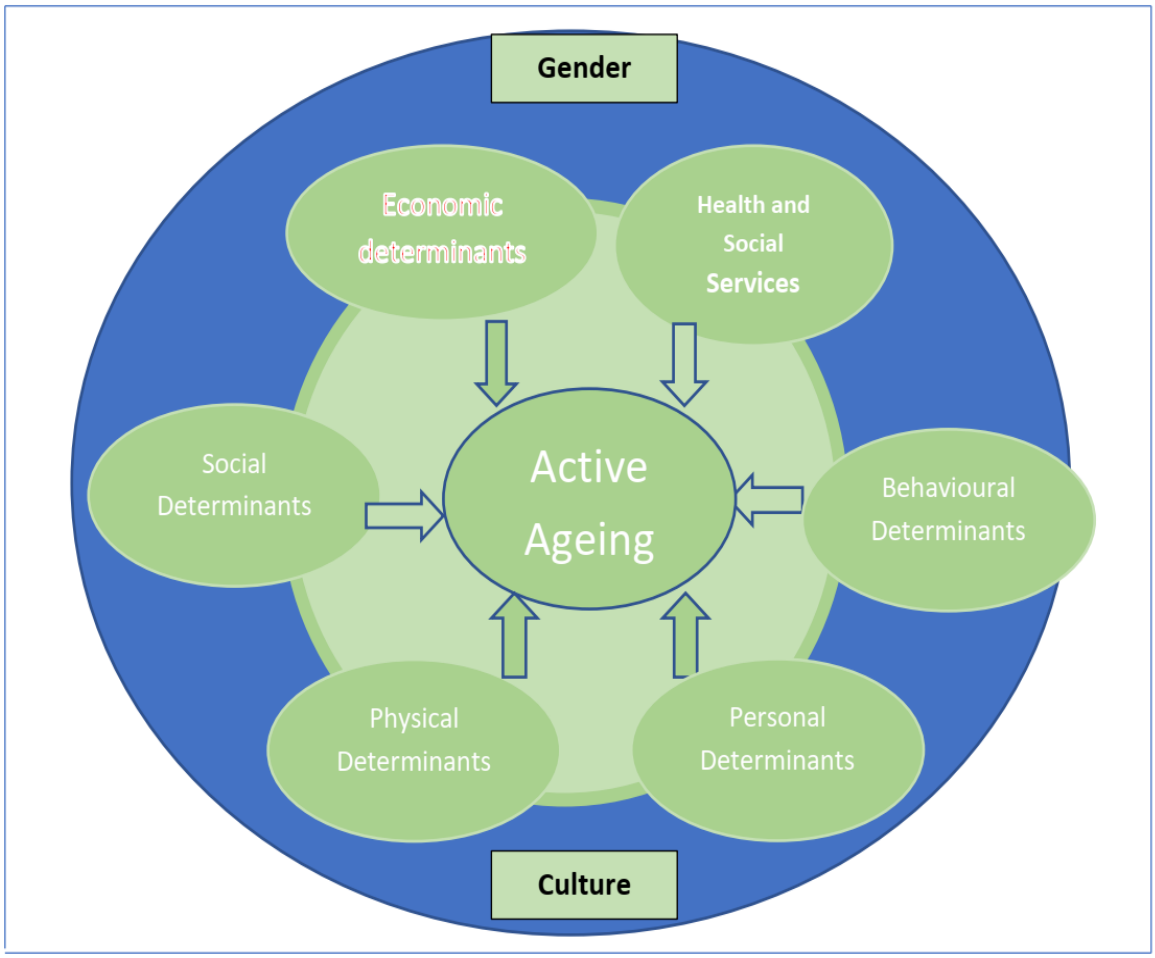
While what is discussed above is structured around ageing and its implications per se, attention is now focused on a holistic approach towards older people to accomplish a healthy, safe and productive life. Such a global and right-based approach for creating a lively elderly community is called active ageing. It was in the late 1990's that the term 'active ageing' was adopted by WHO. According to the World Health Organization (WHO), active ageing is the "process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age". So, it is about people becoming vigorously active, and proceeding their participation in social, economic, cultural, spiritual and civic affairs in older age..." Active ageing allows people to realize their potential for physical, social, and mental well-being throughout the life course and to participate in society, while providing them with adequate protection, security and care when they need." While Labour force participation among the elderly is one of the core pillars of active ageing, this definition also throws light on the importance of enhancing and optimizing well-being among the aged. The involvement of older people in various physical activities enables them to protect their cognitive abilities which in turn may delay their the dependency syndrome associated with ageing (Rubio, Lazaro & Sanchez Sanchez, 2009). It is quite manifest that owing to vibrant physical activities and productive use of leisure time, many consistent and healthy relationships are maintained among the aged (Cachadinha, Pedro & Fialho, 2011). Mere physical and social well-being are not active ageing; instead the inherent principle of active ageing is that people should be able to experience, participate and enjoy an active

and vigorous life throughout their entire life span (Avramov & Maskova 2003). The term ‘active ageing’ in early literature confined to post retirement activities only. The WHO and European Union referred to active ageing differently. In European Union, the concept of Active Ageing is tantamount to integrated as prolonged economic activity which can be associated with working for a longer time and keeping ourselves engaged in socially desirable and productive activities (Avramov & Maskova 2003).

The WHO framework on active ageing focussed on healthy lifestyles whereas EU thrusted on age management interventional techniques via employment reforms (Lassen, 2014). Secondly, while WHO holds active ageing and successful ageing as one and the same, EU holds that active ageing is synonymous with productive ageing. WHO Brasilia Declaration on Ageing (1996) stated that “the more active the elderly are, the more they can contribute to society.” WHO (2002) enunciated that the word ‘active' does not imply being physically active or taking part in the labour force but to be an integrated and informed participant in society in tune with desires, needs and capabilities. Active ageing, therefore, is an ensemble of productive ageing, high quality of life and physical and mental well-being (Clarke & Warren, 2007). The concept of active ageing overlaps with that of successful ageing (Bowling, 1993, 2006, Bowling, 2008). In his study, “Perception of the older person about Active Ageing in 2008”, he found that active ageing was synonymous with maintaining salutary health. It is to be borne in mind that the three cardinal pillars of active ageing are health, participation and security. UN principles for the older persons’ viz care, dignity, self-fulfillment, participation and interdependence guide this framework. The myriad activities of elderly women are influenced by educational and economic status, gender and class.(Singh, 2014). It is, therefore, distinctively clear that the crucial determinants of active ageing may be explained in terms of socio-economic, cultural, behavioural, gender and environmental factors.

Figure 1.1

Determinants of Active Ageing



Source: Paul etal (2012)

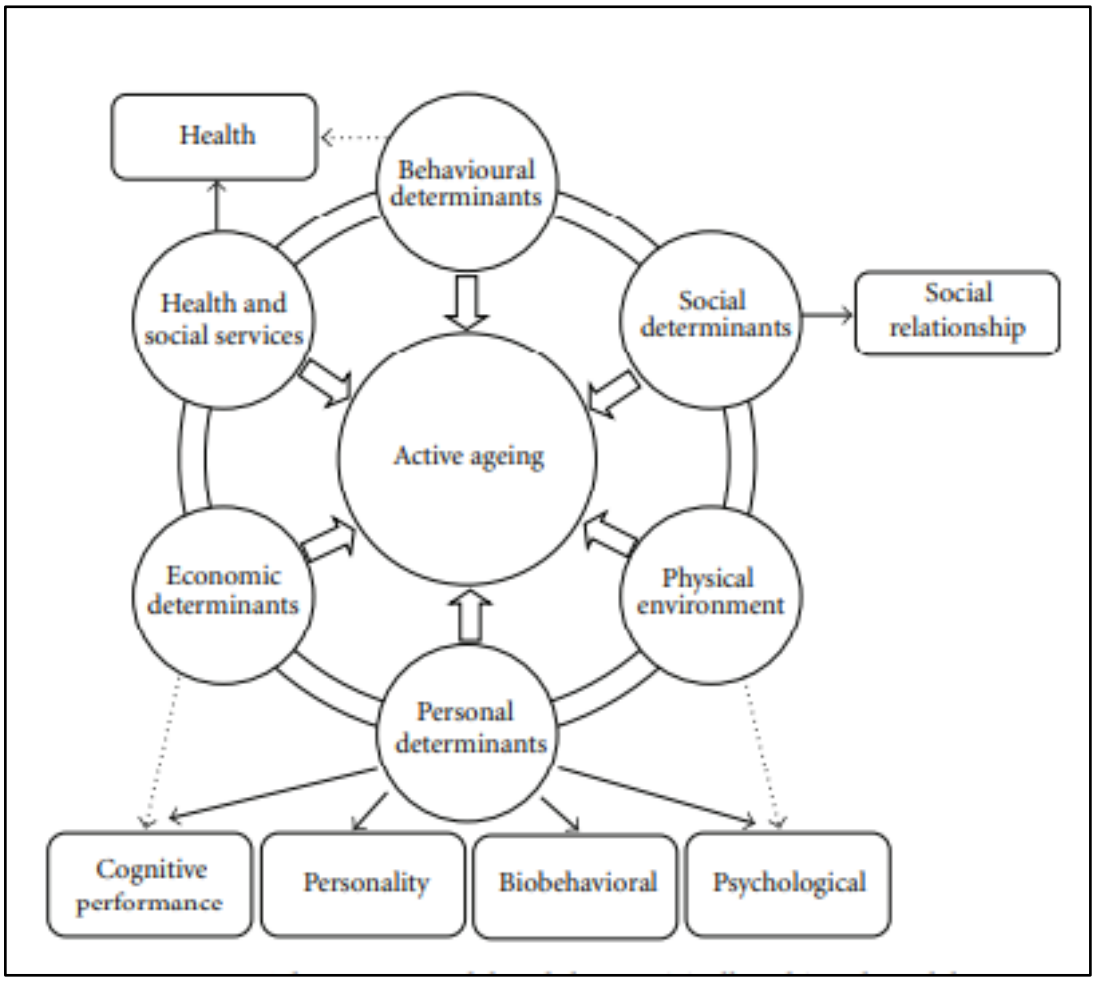
Active ageing dwells on individuals as well as groups. If individuals are to grow healthily, society should provide a conducive environment to which the individuals belong to. Secondly, active ageing is overwhelmingly targeted at enhancing the quality of life of older people as it is a successive undertaking to shore up the trajectories of ageing. The factors which shape the process of ageing are personal factors, environmental factors, behavioural factors, social factors and institutional factors. The opportunities for entering active ageing can't be expected of a free good from outside. Instead it must be created by individuals themselves within the ambit of the state.

More importantly, as stated elsewhere, active ageing encompasses the three broad domains of life viz health, integration and participation. Of this, the most critical pre-condition for active ageing is achievement of a good health which has to be bolstered by the other two i.e. integration and intergenerational relationships. There are some activities which keep the aged engaged and help boost their self-image, mental disposition and access to meaningful work. (Harlow-Rosentraub, Wilson & Steele, 2006; Zedlewski & Butrica, 2007). Raymond et al. (2013) observed that the social participation of grey population is influenced by socio-economic, cultural and health disparities. Alan Walker (2009) stated the proximal factors for outcomes of active ageing as "reserve capacity, emotional regulation, self-efficacy and control, coping skills, pro-social attitude, self-image ageing, social and family network, stressful events, income, friendly environment, health and social services availability, and ageing stereotypes." Rowe and Khan (1997) used the term 'successful ageing' and defined it as "We define successful ageing as including three main components: low probability of disease and disease-related disability, high cognitive and physical functional capacity, and active engagement with life." "Successful ageing" refers to such cases where the aged are bereft of chronic and acute diseases, are intellectually sound, have vital body and make use of these qualities to be engaged with the society in which they are living. The various terms applied in gerontological research on different aspects of ageing are healthy ageing (Ryff, 2009), productive ageing (Morrow-Howell, Hinterlong, & Sherraden, 2001), ageing well (Carmel, Morse, & Torres-Gil, 2007), optimal ageing (Aldwin, Spiro, & Park, 2006), and active ageing (Fernández Ballesteros, 2008). Obviously, most people would like to see that they reach the evening of their life and live their life without being let down by chronic diseases. However, although attempts are afoot to lengthen life expectancy and intensify disease-free old age, most of the elderly are frail and dependent. So, normative definitions of active ageing are not supposed to discriminate against those individuals/groups who have yet to have access to 'active ageing.' The United Nations' Economic Commission for Europe reported that it is imperative to take into account the process of ageing from divergent perspectives

and that there is an urgent need to foster vibrant involvement in the community by assuring intergenerational relations (UNECE 2002).

Figure1.2

Model on Active Ageing



WHO (2002)

1.3 Research Problem

Ageing in Kerala has become one of the teething problems before the govt. While the fiscal stress with which Kerala is grappling with as an economic issue, a large preponderance of elderly population to total population has really become a ticklish social issue to handle. Among the Indian states, Kerala stands apart in terms of the rate of ageing and features of the elderly population. Of all the states, Kerala

is reported to have the highest proportion of the elderly in India. As per 2011 census the aged comes to 12.6 percent of the total population of the state,whereas the corresponding percentage for all India is only 8.6 percent. The absolute number of the elderly in Kerala (7.4 million in 2011) accounts for 7.16 percent of the total elderly population of India, much higher than the state's share in the total population of the country (4 percent). We often come across various reports that the aged are left behind in bus bays, theatres, worship centres and the like. It is because the aged have naturally proved that they have become recipients of care and providers of burden. However, this is an inescapable reality because ageing is an incurable disease anywhere and everywhere.

The situation became more compounded when the young blood flied seeking greener pastures abroad. So, the problem of ageing on the one side and the prospects of migration on the other kept elderly at receiving end. The state of Kerala stands aloof in this regard because it is the state with highest life expectancy in the country which is at par with developed countries of the world. The highest mean age at marriage, lowest infant mortality rate, lowest maternal mortality rate are the other spectacular feats the state can boast of. But side by side, economic development, despite these creditable gains, found itself at its nadir. This uncommon phenomenon won the international attention and it is christened as Kerala model. However, a cursory look reveals that the good done by these achievements is undone by erosion in the quality of life of a genre of people, i.e. the elderly community of Kerala. Hence, the concept 'active ageing' has received much attention among international literature.

The multidimensional aspects of ageing which comprise of a positive subjective well-being, physical functionality, social and mental health, vigorous involvement in family affairs, peer group intercourse, social cohesion which can altogether be determined the active ageing are apparently missing among the elderly in Kerala. There is no wonder that active ageing can immensely contribute towards enhancing the SDP of the state. The presence of many social security initiatives has only helped the conditions of elderly more debilitating. Even though studies on elderly are aplenty, there is very little systematic study encapsulating the concept of

active ageing in the context of elderly community in Kerala. Similarly, documented research is patchy on gender dimensions and WHO framework of active ageing and its application in Kerala context. At this juncture, certain pertinent questions pop up such as: what are the crucial determinants of active ageing in Kerala? What is the relevance of WHO framework of active ageing in Kerala? What dimensions of WHO are more contributory for active ageing in Kerala? What is the alternative policy framework for active ageing in Kerala?

In a state like Kerala, which records the largest proportion of elderly population in the country, the research problem becomes more relevant when it comes to active ageing among the elderly. While studies are galore on ageing, the thrust on active ageing is an important area which necessitates further research. The relevance of WHO framework of active ageing and its application in Kerala, dimensions of WHO framework, determinants of active ageing in Kerala and the alternate policy framework are researched in this context.

Based on the framework of WHO on active ageing, we have taken an attempt to study the relevance and application of active ageing in Kerala, its dimensions in the context of Kerala, the determinants of active ageing and the alternate policy recommendations.

1.4 Rationale of the study

The rationale of the study on active ageing in Kerala, with respect to WHO framework, is based on the imperative need to address the impending challenges confronted posed by an ageing population of Kerala. The reason for the study stems from the fact that by applying the WHO's active ageing model, which thrusts optimizing security, health and participation for older adults, it is possible to explore how these are applicable in the peculiar economic and socio-cultural context of Kerala. It attempts to identify the specific determinants and dimensions of active ageing such as environmental factors, social support systems and health services. The study also attempts to provide recommendations which could raise the quality

of life for the aged in Kerala and thereby guaranteeing that they lead an active and contented life.

Accordingly, the following objectives are set.

1.5 Objectives of the Study

The broad objective of this study is to examine the dimensions of WHO's active ageing framework in Kerala. Specifically, the study aims to:

1. To assess the Socio-economic Characteristics of elderly individuals in Kerala.

2. To analyse the gender-specific differences in WHO active ageing dimensions within Kerala.

3. To investigate the impact of seven composite indices derived from the WHO active ageing framework on self-reported active ageing status in Kerala, and explore how these effects vary by gender and religion.

4. To propose policy recommendations for enhancing active ageing practices among the elderly in Kerala

1.6 Hypothesis of the study

H0: Socio-economic factors do not significantly influence the active ageing status of elderly individuals in Kerala, irrespective of their gender.

H1: Socio-economic factors significantly influence the active ageing status of elderly individuals in Kerala, irrespective of their gender.

H0: The seven composite indexes of various dimensions of the WHO framework for active ageing will not have a positive impact on self-reported active ageing status in Kerala

H1: The seven composite indexes of various dimensions of the WHO framework for active ageing will have a positive impact on self-reported active ageing status in Kerala

H0: The impact of the seven composite indexes on self-reported active ageing status will not vary by gender.

H1: The impact of the seven composite indexes on self-reported active ageing status will vary by gender.

H0: The impact of the seven composite indexes on self-reported active ageing status will not vary by religion.

H1: The impact of the seven composite indexes on self-reported active ageing status will vary by religion.

1.7 Data and Methodology

The study is based on randomly selected 720 cross section units by collecting the data from Ernakulam district of Kerala by using a fusion of random sampling and systematic sampling method. Ernakulam district is selected for the study as it has recorded largest number of elderly groups of 60 and above in the state (Economic Review 2023). In the first stage, out of seven taluks of Ernakulam, Paravoor taluk was randomly selected. In the second stage, out of 13 villages in the taluk, Puthanvelikkara village was selected. In the final stage, out of 18 wards of the given village, ward number 11 was selected. This ward has 1458 adult voters as per the official website of Election Commission of Kerala. For this population, as per sample size formula, a sample of 733 is required to have a confidence interval of 95%. To identify sample from the voters' list, systematic sampling method was used based on a sample interval of 2 which is calculated by dividing the total population of 1458 with the sample size of 733. Even though, as per sampling methodology, total sample size is 733, 13 respondents were not found fit due to missing value, skewed data, lack of co-operation etc and hence sample size is finalized as 720.

A pilot study of 100 sample size was conducted and that reliability and validity tests were conducted. Accordingly, some questions were deleted and finally a well-structured interview schedule was prepared for the collection of data. Appropriate statistical tools such as chi-square test, cross tabulation and regression techniques were applied. The research methodology on data collection and statistical analysis has been shown exclusively in chapter 4.

1.8 Limitations of the study

The study does not claim to be perfect; instead has limitations too. The most intractable issue was communication barrier with the aged. It was an onerous task to garner information from the elderly due to their physical weaknesses. They sometimes felt the fret of health-related questions. Another limitation of the study is that it restricts analysis to specific aspects of the WHO active ageing frame work in the Kerala Context, deliberately excluding other aspects to maintain focus. Apart from this, Covid-19 pandemic proved to be another roadblock which sometimes paved the way for the stoppage of data collection although temporarily.

1.9 Chapter scheme

The entire thesis is divided into eight chapters. First chapter deals in introduction, statement of the problem, objectives of the study, hypothesis, methodology , major limitations of the study and chapter scheme. Chapter two and three deal in both empirical review of related literature and demographic profile trends and patterns. Fourth chapter deals in methodology and a detailed analytical framework incorporated from WHO. Chapters five, six and seven extensively deal in analysis on socio-economic profile, gender dimension of active ageing and determinants of active ageing. The eighth chapter calls for conclusions and policy prescriptions.

CHAPTER-II

REVIEW OF LITERATURE

2.1 Introduction

It was in early 1960's that studies on elderly began. The World Assembly on Ageing in Vienna and the International Plan of Action on Ageing by the UN General Assembly prepared the ground for a meticulous study on the phenomenon of ageing and it also kick started a feeling that longevity is one of the formidable issues the world is going to be grappled with. Over the years, strategies evolved encapsulating multidisciplinary efforts and innovative strategies to tide over the mounting issues of the aged in the society. While ageing per se had become a growing area of interest, WHO came out with the issue of active ageing in the year 2002. And now, attention is shifted to healthy ageing. The conditions of elderly have undergone considerable metamorphosis under globalization, liberalization and privatization. As the extant study is about active ageing and its implications, this chapter is devoted to the extensive review of the related literature on ageing and active ageing.

2. 2 Review on Ageing

World Population Prospects (2019) reported that the old of the world are ageing at a faster pace with 703 million persons aged 65 years or over. While 1 person out of 11 persons in the year 2019 crossed the age of 65, it is projected to soar to 1 in 6 by 2050. The longevity revolution is experienced by almost all nations of the world as a result of the advancement in medical facilitates. This opportunity has to be leveraged by protecting the human right of older people, and optimizing benefits to full potential and thereby augmenting well-being (Racherla 2019)

UNDESA[1] (2019) reported that women as of now outlive men by 4.8 years and that those persons who are aged 65 during 2015-20 would live additionally 17 years and by 2045-50, this would again be up to 19 years. UNESCAP (2013) recognised the need for fine-tuning and adapting health in response to growing demand for support and care for the elderly especially the older women. Evidence shows that older people in less developed countries multiply faster than developed countries. Around the world, in 2019 there were 16 persons above the age 65 per 100 persons who are aged in between 20-64. This number is projected to rise to 21 older persons per 100 persons who are aged between 20-64. By closely monitoring what the aged need in the evening of their lives, we can move towards non-discrimination among them and promote healthy ageing.

UNESCAP (2018)[2] expressed apprehension over rising sexual violence against women. Existing studies are somewhat silent about this aspect. Most of the data on women are collected in their reproductive age of 15-49. The sexuality of older women are often less talked about and need further investigation.

Mahadevan K (2011) subscribed to the view that those elderly who are engaged in cognitive habits like reading are less likely to have dementia compared to those who are underemployed. The elderly contribution towards childcare also keeps them distracted from the hustle of life and they live longer. There are many reasons attributed to changes in longevity like improvement in education and health care, positive cultural shift and less onerous working environment.

Notwithstanding the fact that although most of the people in the "third age" (65 years) possess good health so as to have an independent life and lively participation in their society, the case of those who are in the "fourth age" (85 years) are somewhat debilitating, frail and distraught (Baltes & Mayer, 1999; Lindenberger et al 2010)

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1 UNDESA: United Nations Department of Economic and Social Affairs

2 UNESCAP: United Nations Economic and Social Commission for Asia and the Pacific

Robert (2009) investigated the role of community-based interventions in fuelling the mental disposition of the aged and concluded that community contexts with which elderly cope up shape and reshape them. In old age, differences are galore among people with respect to cognitive ability, physical capability and social interaction (Ferraro & Shippee, 2009).

Rodriguez- Laso Angel, et al.(2007) comprehensively analysed the cause and effect of social relationships on the socio-economic status of the aged and concluded that it would increase their knowledge on coping strategy and thereby longevity too. R.M.Kaplan&R.G.Kronick, (2006) observed that the unmarried, separated and widowed persons are more likely to die earlier than those who are married.

Anupamadatha (2004) voiced concern over the fact that while the developed countries were tasked with taking earnest efforts to get on with the conundrum of ageing, this has made its presence felt in a country like India too. So, the challenges of ageing population are galore and badly need systematic and elderly - friendly policies.

U.N. secretary Koffi Annan In the second assembly of population ageing (United Nations, 2002 ,p114) held "ageing is no longer a first world issue, we should recognize that as more people are better educated, live longer and stay healthy, older persons can do make greater contributions to society than before."

Siva Raju (2002) held the view that inadequate and insufficient income was the most teething problem among the elderly. More often than not, the aged are unable to meet their basic requirements without having access to minimum income. This is triggered off by discontinuous and inappropriate social security initiatives.

Tripathi (1999) maintained that the long cherished wisdom of the aged is not taken care of, rather they are alienated in today's age of technological explosion. This makes them dispirited and demotivated. Hence pro – active steps to be taken to bring them to the mainstream.

Irudayarajan (1999) calculated rising number of female aged than that of male aged in the state of Kerala. Hence the social security measures of the state should be fine-tuned in that direction. During 1996 to 2026, the momentum of ageing in Kerala is expected to jack up around 126 persons per 100 children. Zachariah and Irudayarajan (1997) also held that as Kerala had already replacement level- fertility similar to that of developed countries of the world, the ageing revolution of Kerala assumes myriad significance.

2.3 Review on Active Ageing

In recent years, active ageing has had many implications and connotations and that several researchers incorporated many things in active ageing phenotype. (Rodriguez et al 2017). WHO described that having a positive well-being, good physical and mental health, community participation, involvement in familial activities, vital role in peer group etc are found to be the key aspects that make ageing agile (Fernández et al 2013, Rantanen 2019) Lawton (1973) subscribed to the view that the ecological approach sees ageing as a conglomeration between the functional age of the individual and their adaption to the social and physical environment. Such analysis is pervasive as they include adaptable communities, accessibility, good cities and universal design (Alley et al 2007) (Keller 1997).

dA Silva et al (2016) in another study focussed on the dietary aspect and held the view that the life style factors such as adoption of food restrictions, balanced diet and other life style factors influenced active ageing. In this connection Richards et al (2013) also highlighted the role of physical activities in maintaining active ageing.

Chan et al (2015) reiterated that the active lives of the aged in a society are greatly influenced by a collaborative social network and well-being. There are some studies that highlighted the significance of place in deciding upon active ageing (Barnett et al 2017, Sorensen 2018 and Filiatrault 2015) The factors include area deprivation, measures of land use, and degradation of neighbourhood. Other factors influencing active ageing include walkability, pedestrian comity and accessibility to

public space (Alley 2007), topography and climate (Annear 2014), environment that imbibes support resilience, pedestrian-friendly amenities (Roberts et al 2017), access to public transportation system and availability of retail outlets(Woo et al 2010and Veitch 2018)

Annear et al. (2014) remarked that a major chunk of studies on active ageing dwelled on many factors that influence the concept, especially socio-economic status, education, age, health status and self-efficacy. These factors are inevitable in framing opportunities and experiences for older people to engage vigorously in the communities and sustain their well-being as they become old. The research highlighted multifarious nature of active ageing, reiterating that suggesting that a systemic approach is necessary to discern how these diverse factors contribute to the quality of life for the aged.

Group (2013) maintained that active ageing incorporates various things such as social relationships, physical health, personal beliefs, and psychological state of mind. As age progresses, the quality of life become on the wane and that adversely affects autonomy and life expectancy. Such factors peer group influence, adaptability, accessibility, access to meaningful life, good physical and mental health, good functional ability and fitness define active ageing (Fernández et al 2013 and Rantanen et al 2019)

Zaidi et al (2013) enunciated that active ageing is the capability of the aged to stay active within the society and family to which they belong to and to lead secure and independent lives by participating in the local market and more importantly contributing to unpaid but more valuable role to family and community.

There is an urgent need to look into the factors responsible for determining the health of the aged as well as the preventive factors which deter the aged to push themselves to the mainstream society. The factors such as ‘mobility’ and ‘independence’ play decisive roles in transforming elderly from being feeble to being firm (Carr et al 2013, Haselwandter et al (2015) and Yen (2012) Strong welfare state support that the aged enjoy allow them to accord financial support to their adult children (Brandt et al 2009).

Wiederhold et al (2013) observed that the healthy behaviour among the aged can be guaranteed by focusing on fulfilling their needs and aspirations. It was also researched that there is a positive correlation between health status of people and active ageing (Lak et al 2019 p 28). To put their words "Active Ageing is a process through which an individual tries to maintain the components of health by participating in activities consistent with their objectives, abilities, and opportunities in the community, which can be described as what they want to do and can do, and opportunities to do the activities they enjoy."

Seeman et al (2010) propounded that those elderly who are engaged in various physical activities were seen to have much physical improvement than others. This is also a road to better mental health and rejuvenation.

Beard (2010) extolled that the aged have to be provided with essential elements such as affordable and accessible health care services, opportunities for active life, social security, transportation facility, affordable housing, access to information, social intercourse, place to worship and financial freedom.

The multidimensional aspects of active ageing is inclusive of physical, social and individual components, environments, policy making, health and physical activities (Filiatrault 2015) Active ageing as a social and cultural notion is embedded in diverse environmental contexts to clarify the ways a person reacts to the environment they live in (Bronfenbrenner 2006)

Many concepts were put to use in gerontological research on divergent aspects of ageing viz ageing well (Carmel, Morse, & Torres-Gil, 2007), productive ageing (Morrow-Howell, Hinterlong, & Sherraden, 2001) healthy ageing (Ryff, 2009), optimal ageing (Aldwin, Spiro, & Park, 2006), and active ageing (Fernández Ballesteros, 2008). "We define successful ageing as including three main components: low probability of disease and disease-related disability, high cognitive and physical functional capacity, and active engagement with life" (Rowe & Kahn, 1997, p 433).

The UNECE[3] was bent on viewing the processing of ageing from a different holistic perspective. It upheld its commitment to perk up the sociopolitical, cultural and economic participation of the aged by promoting vigorous involvement in the community by sustaining intergenerational relation (UNECE 2002).

Zanjari et al (2007) opined that active ageing is tantamount to ageing well. WHO (2002) held that if the aged are able to sustain their participation in daily activities, they can sustain well-being and health. The society has a fuller responsibility in maintaining active ageing among the aged. If the aged do get opportunities to take part social security schemes, environmental planning, health services and the like, they can reach the path of active ageing. Active Ageing Index enables to rank many countries based on the status the elderly have with regard to their involvement in the work force (Rodriguez et al 2017)

Phelan et al. (2004) investigated the secret of successful ageing among Japanese and American elderly and observed that the opinions and views of successful ageing differed among the aged and it is multidimensional and complex in nature.

Kalache (2002) held that active ageing encapsulated those attributes such as independence, quality of life, autonomy, ability to make decisions, ability to perform functions, ability to perceive culture and value system in which they are living, coping strategies and setting limits for rules and preferences.

Sallis and Fisher (1990) discussed the ecological approach to ageing and concluded that this approach helped go up the level of physical activity of the aged as an independent and separate group. This inculcated a positive effect on broadening their mind and liberated them from bondage, isolation and stigma.

Labus (2013), Fadda et al (2010), Sugiyama (2007), Mendez (2013), Zeiter et al (2012) and Del Barrio et al (2018) enunciated that the vital

[3] UNECE: United Nations Economic Commission for Europe

components that influence active ageing include neighbourhood cohesion, better economic and social status, age-specific community, increased involvement in work, conducive social environment and sound literacy.

Studies on policy making for the aged included various key concepts such as good governance, equity, social justice, transparency, inclusiveness, social and physical environment, community interaction and space to develop knowledge (Afacan (2013), Philipson (2012) and Barbosa et al 2016)

There are some opinions hovering around that the process of active ageing does not occur inevitably; instead can be altered thanks to adequate and meaningful interventions (Braveman, Egerter, & Williams, 2011)

The interventions for accomplishing successful ageing can be channelized in relation to participation in community activities, health behaviour, policies on education, income, labour market and housing (Tesch-Römer 2012). Being old in the beginning of 20th century and 21st century are markedly different each other. Apart from life expectancy, the health care system, living environment, cognitive enhancement, adaptability, resilience, dispositions etc of the living circumstances do undergo significant changes to transforming ageing process into an agile process (Birditt and Antonucci 2007). It was empirically researched that the most noteworthy aspect of subjective quality of life are social intercourse and health (Diener & Suh, 1998). Epidemiological research investigated that health is influenced by the socio-economic status (Herd, Robert, & House, 2011) There are mounting evidences for predominant increase in social inequalities in health as age advances (Rostad, Deeg, & Schei, 2009; Yao & Robert, 2008)

There are many aspects of social inequality and developmental trajectories like migration status (Longino & Bradley, 2006; Warnes, 2010), gender ((Arber, Davidson, & Ginn, 2003), income and wealth (Pinquart & Sorensen, 2000; Schöllgen, Huxhold, & Tesch-Römer, 2010) influencing the long drawn process of active ageing. It was in the early phases of life course that foundation stone of active ageing is laid especially education and life experience (Dannefer, 2011). There is ample gerontological evidence that loneliness in old age prevents the process of

active ageing and that social integration, positivity in partnership, structural diversity and independence contribute positively (De Jong Gierveld, Broese van Groenou, Hoogendoorn, & Smit, 2009). Neighbourhood, friendship and peers provide emotional asylum and considerable empathy to the aged which makes their life meaningful (Huxhold, Mahne, & Naumann, 2010). Early investments in education pay off well in investments in active ageing in later period (UNECE 2002)

Deaton (2007) opined that in less underdeveloped countries there is decline in the health satisfaction and increase in self-reported disability as age advances which otherwise happens in developed countries and that this has its tremendous influence on active ageing. Jagger et al (2008) pinned his idea on the fact that the average level of health and inequalities in healthy life expectancy differ significantly across different countries which are having strong bearing on optimal ageing. The impact of social inequality on health was more severe in England and the US in comparison with Central-Western European countries (Avendano, Glymour, Banks, & Mackenbach, 2009; Banks, Marmot, Oldfield, & Smith, 2007). With regard to gender differences, it was seen that women were reported to have less stable health conditions compared to men, but were found having lesser cardiac disease than that of men. Across divergent welfare models, these gender differences were consistently found (Crimmins, Kim, & Solé-Auró, 2010). As qualitative human capital among the ageing population is increasingly being seen thanks to better health, there is an overwhelming involvement in volunteering in social context and allocation of social responsibilities on their part (Anheier & Salamon, 1998). It is seen that across countries, health and education unfailingly help predict volunteering (Erlinghagen & Hank, 2006). Regarding investments in social frameworks, Veenhoven (2009, p5) stated" Citizens live longer and happier in nations where the legal system functions well, where the government is effective and where corruption is low." Hank (2011) held that successful ageing is a harmonious blending of vigorous functioning, social participation and good health. Extensive research on various nuances of ageing unravelled that those having positive self-image of ageing live longer as they are healthier with compared to those with positive self-image(Levy, 2003; Levy, Slade, & Gill, 2006; Levy, Slade, Kunkel, & Kasl, 2002).

Kumar et.al (2010) researched the possibility of re-employment of the elderly with the help of active ageing. The study revealed that the aged preferred to work even after retirement and their physical and mental health remained intact. They also were punctual during office timings. This study shows the role of involvement in activities that keep the aged engaged throughout.

Dey (2010) held that the concept of active ageing was increasingly used by academia, policy makers and administrators has now been accepted by national organizations, as well as academicians, who support the idea of continued involvement of elderly in socially and productive meaningful work.

2.4 Conclusion

The above reviews discussed various studies on ageing and active ageing and its determinants. The major reviews anchored around the factors like volunteering, social interaction, health, education, peer group, labour market participation, income, life expectancy, resilience, cognitive ability, access to meaningful life, mental health, environment, good governance, social justice, inclusiveness, environmental planning etc having a strong bearing on active ageing. However, no seminal study on active ageing, gender dimensions of active ageing and application of WHO framework on active ageing is seen in Kerala context, although we could come across some studies on ageing per se in Kerala context.

The WHO Active Ageing Framework, which rests on the pillars of health, participation, and security, is largely applicable to the Kerala context due to the state's distinctive demographic, social, and institutional characteristics. Kerala is at the forefront of population ageing in India, characterised by low fertility, high life expectancy, and a rapidly expanding elderly population. The state has made significant progress in public health infrastructure, primary healthcare delivery, and social development indicators, which aligns closely with the *health* dimension of the WHO framework. In terms of *participation*, Kerala exhibits relatively higher levels of literacy, social awareness, and community engagement among older persons, supported by strong local self-governance institutions, neighbourhood groups, and

civil society organisations. However, despite these strengths, the extent of productive and social participation of the elderly remains uneven, particularly along lines of gender, income, health status, and place of residence, suggesting partial rather than complete realisation of this pillar.

With respect to *security*, Kerala has implemented several welfare schemes for the elderly, including social pensions, healthcare support, and housing assistance. While these initiatives resonate with the WHO framework, their adequacy, accessibility, and sustainability vary across socio-economic groups. Issues such as income insecurity, dependence on remittances, informal employment histories, and rising healthcare costs limit the effective coverage of social protection, especially among elderly women and the oldest-old. Moreover, the WHO framework emphasises a life-course approach, recognising that active ageing outcomes are shaped by earlier investments in education, health, and employment. Kerala's historical investments in human development strongly support this perspective. Nevertheless, emerging challenges such as migration-induced family fragmentation, changing caregiving arrangements, and urbanisation pose new constraints to active ageing that are not uniformly addressed by existing policies. Thus, while the WHO Active Ageing Framework is conceptually and structurally relevant to Kerala, its practical application reveals context-specific gaps and inequalities. This underscores the need for an empirical assessment of active ageing in Kerala that adapts the WHO framework to local socio-economic realities, gender dimensions, and institutional capacities. The present study attempts to address this gap by operationalising the WHO framework within the Kerala context and examining the determinants of active ageing among the elderly.

CHAPTER III

DEMOGRAPHIC PROFILE: TRENDS AND PATTERNS

3.1 Introduction

There are many people today who are hunted and haunted by the ominous change in the structure of the world population. Although this change is skewed towards the propensity of 'ageing', which is, however, a 'triumph of development (Babatunde 2014) it also paved the way for a multitude of issues and challenges among the elderly. The "challenge is to provide opportunities for people to age with dignity and security, enjoying life through the full realization of all human rights and fundamental freedoms" (UNFPA)[1] and Help Age International, 2012). A new world is ahead with longer life expectancy, retirement and very few children which are generally characterized as 'ageing of the population' (Census of India 2011). Population ageing has had a tremendous impact on societies. It casts a profound influence on long term care, social security and intergenerational relationships.

3.2 Trends in Global Population and Aged Population

It is deemed desirable to delve into the trends in the global population and aged population as tabled below.

[1] United Nations Population Fund

Table 3.1

Population by Continent

Continent name	Population (2011)	Most populous country	Most populous city
Asia	4,140,336,501	People's Republic of China (1,341,403,687)	Tokyo (35,676,000)
Africa	994,527,534	Nigeria (152,217,341)	Cairo (19,439,541)
Europe	738,523,843	Russia (142,905,200)	Moscow (14,837,510)
North America	528,720,588	United States of America (308,745,538)	Mexico City (21,163,226)
South America	385,742,554	Brazil (190,732,694)	São Paulo (19,672,582)
Oceania	36,102,071	Australia (22,612,355)	Sydney (4,575,532)
Antarctica	4,490(varies)	N/A	McMurdo Station (955)

Source: Census 2011

It is evident from table 3.1 that Asia is ranked first in having largest number of population next to Africa, Europe, North America, South America and Oceania. Within Asia, the most populous country is China having a population of 1.3 billion and Tokyo is the most populous city with a population of 3.5 crore. Africa comes next to Asia with a population of around 1 billion. It is the Antarctica belonging to the lowest category having a small and fluctuating population. Hence, continent – wise, Asia accommodates largest population.

Table 3.2

Global Ageing Trends: Regional Distribution of Elderly Population

Regions	Aged population (in Million)			
	1950	**1975**	**2010**	**2050**
High Developed countries	46.46	46.80	35.46	20.71
Low Developed countries	53.53	53.19	64.53	79.28
Asia	46.10	44.80	54.48	61.55
Africa	5.88	6.11	7.30	10.59
Oceania	0.69	0.67	0.72	0.60
Latin America and the Caribbean	0.04	6.09	7.77	9.26
North America	10.38	10.20	8.50	6.20
Europe	32.34	32.21	21.20	11.77
World	**95.43**	**100.08**	**99.97**	**99.97**

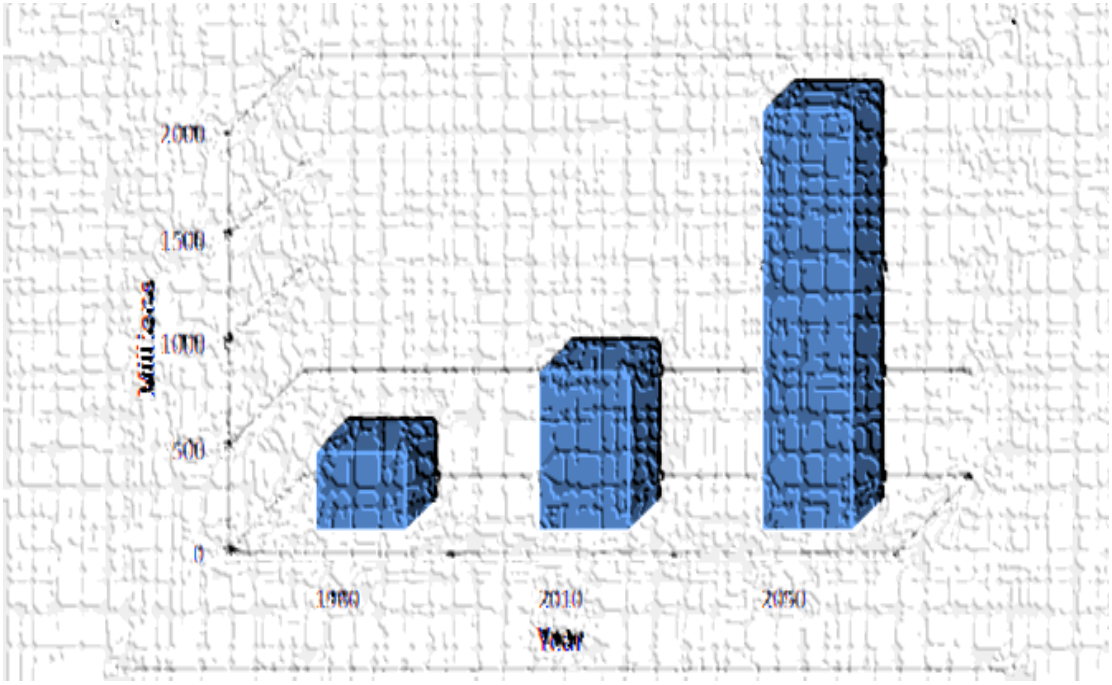
Source: UNDP 2009

The table 3.2 illustrating the aged population (Millions) by region from 1950 to projected figures for 2050 reveals significant demographic trends. High developed countries show a marked decline in their elderly population, decreasing from 46.46 million in 1950 to a projected 20.71 million by 2050, likely due to low birth rates and an ageing population without sufficient replenishment. In contrast, low developed countries are experiencing growth, with their aged population increasing from 53.53 million in 1950 to an anticipated 79.28 million by 2050, reflecting improvements in healthcare and longevity. Asia also shows a steady rise in its elderly demographic, from 46.10 million in 1950 to a projected 61.55 million, driven by significant changes in countries like China and India. Meanwhile, Africa's aged population remains relatively low but is gradually increasing from 5.88 million to an expected 10.59 million by 2050. Oceania's numbers are stable but show a slight decline, while Latin America and the Caribbean are witnessing substantial growth, rising from just 0.04 million in 1950 to a projected 9.26 million. North America’s aged population is projected to decrease from 10.38 million to 6.20 million, reflecting changing demographics influenced by immigration and birth rates. Europe faces a dramatic decline in its elderly population, from 32.34 million

to an expected 11.77 million, highlighting ongoing demographic challenges characterized by low fertility rates and high life expectancy without adequate younger cohorts.

Figure 3.1

Actual and Projected Global Population Aged 60 Years and Above



Source: UN world population prospects: Population Database 2008

It is clear from the chart 3.1 that there were 379 million aged in the year 1980 in the world which rose to 755 million in 2010 and is projected to rise to 2 billion in the year 2050.

3.3 Ageing Scenario: India

It is an indisputable fact that the proportion of elderly in India outnumbered South Asia as a whole. Up to the year 1951, high birth rates coupled with high death rates kept the proportion of persons aged 60 and above at a low level in India. But, since 1991, the proportion of growing population grew steadily. Very recently,

decline in birth rate accelerated ageing process. Today, India is home to one out of ten aged people of the world.

Table 3.3

Demographic Indicators: 2001-2025 Indian snapshot

Indicator	2001-05	2006-10	2011-15	2016-20	2021-25
Population growth rate	1.6	1.4	1.3	1.1	0.9
Crude Birth Rate (CBR)	23.2	21.3	19.6	18.0	16.0
Crude Death Rate(CDR)	7.5	7.3	7.2	7.1	7.2
Infant Mortality Rate(IMR)	61.3	54.3	49.2	44.0	40.2
Under-5 mortality rate	82.0	72.8	65.9	59	54
Total Fertility Rate(TFR)	2.9	2.6	2.3	2.2	2.0
Life Expectancy-Male	63.8	65.8	67.3	68.8	69.8
Life Expectancy-Female	66.1	68.1	69.6	71.1	72.3

Source: Office of the Registrar General 2006 (Projected)

It is evident from table 3.3 that growth rate of population in India, which was 1.6% in 2001-05, fell to 1.3% in 2011-15, 1.1% in 2016-20 and likely to drop further to 0.9% in 2021-25. Similar trends are experienced in the case of CBR, CDR, IMR, and TFR. The variable Crude Death Rate is also projected to fall to 7.2% in 2021-25. The life Expectancy of male and female is likely to increase to 69.8 and 72.3 in 2021-25 respectively.

Table 3.4

Age Composition of Population of India 1961-2026

	Age group		
Year	**0-14 (%)**	**15-59 (%)**	**60 + (%)**
1961	41	53	6
1971	42	53	5
1981	40	54	6
1991	38	56	7
2001	34	59	7
2011	29	63	8
2026	23	64	12

Source: Based on data from the Technical Group on Population Projections (1996 and 2006) of the National Commission on Population.

From table 3.4 it is evident that the age composition of India's population from 1961 to projected figures for 2026 indicates significant demographic shifts. The proportion of the population aged 0-14 years has steadily declined from 41% in 1961 to a projected 23% in 2026, reflecting a decrease in birth rates and a transition towards an older population. Conversely, the working-age group (15-59 years) has increased from 53% to an expected 64%, suggesting a demographic dividend that could enhance economic productivity. Meanwhile, the elderly population (60 years and above) has gradually risen from 6% in 1961 to a projected 12% by 2026, highlighting the growing need for policies addressing the needs of older adults as life expectancy increases.

3.4 Ageing Scenario: Kerala

The proportion of elderly in Kerala above the age 60 which was 33 lakhs in 2001, 57 lakhs in 2021 is poised to go up to 120 lakhs in 2061. While the annual growth rate of aged population is 3.28% at all India level, it is 3.96% for Kerala. The old - age dependency ratio of Kerala which was 19.6% in 2011 shot up to 26.1% in the year 2021 and is projected to 34.3% in the year 2031 (Economic Review 2021).

As can be seen in table 3.5 Ernakulam has recorded highest number of people among the elderly 60+ and lowest in Wayanad (Economic Review 2023). The condition becomes further debilitating where the younger population in the state who are to take care of the aged in the family are flying abroad in search of better employment opportunities leaving them behind (Sujathan 2013)

Table 3.5

District-wise distribution of the population in different age groups-2011

Sl No	District	Numbers in different age group in total district population		
		0-14	**15-59**	**60+**
1	Kasargod	3,42,696	8,35,111	1,29,568
2	Kannur	5,94,411	16,06,593	3,21,999
3	Wayanad	2,12,246	52,64,14	78,760
4	Kozhikode	7,49,692	19,72,762	3,63,839
5	Malappuram	12,41,491	25,26,407	3,45,022
6	Palakkad	6,78,192	17,95,096	3,36,646
7	Thrissur	6,88,592	20,01,050	4,31,558
8	**Ernakulam**	**6,93,215**	**21,35,689**	**4,53,484**
9	Idukki	2,47,338	7,32,193	1,29,443
10	Kottayam	4,13,849	12,47,065	3,13,637
11	Alappuzha	4,46,279	13,57,100	3,24,410
12	Pathanamthitta	2,32,670	7,50,202	2,14,540
13	Kollam	5,83,023	17,00,534	3,51,818
14	Thiruvananthapuram	7,07,280	21,60,992	4,33,155
Kerala		**78,30,974**	**2,13,47,208**	**42,27,879**

Source: Economic Review 2023, Kerala State Planning Board

Table 3.6

Demographic Indicators: 2001-2025 Kerala snapshot

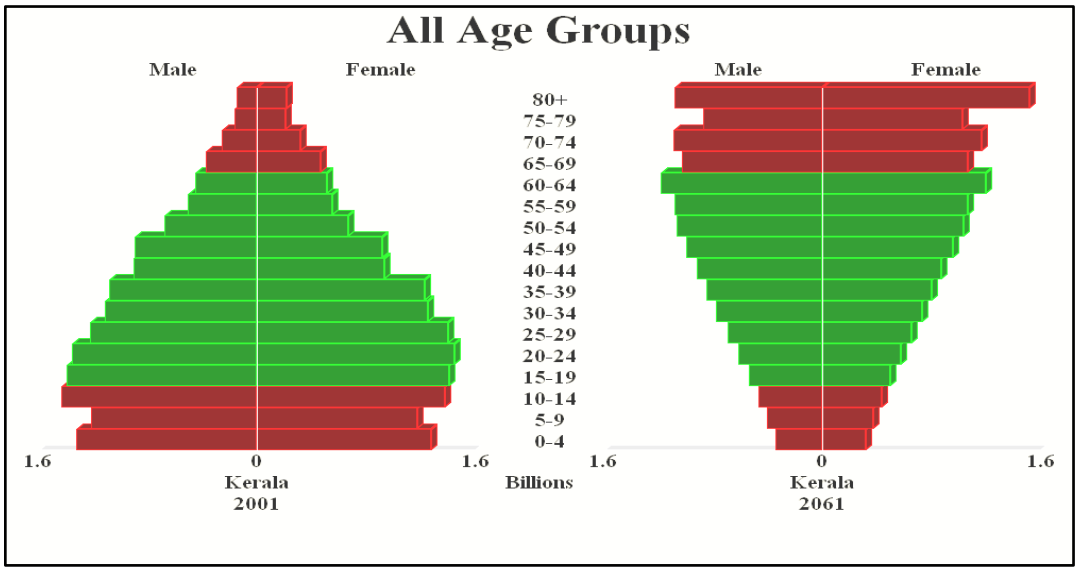
Indicator	2001-05	2006-10	2011-15	2016-20	2021-25
Population growth rate	0.9	0.8	0.6	0.5	0.4
Crude Birth Rate(CBR)	16.3	15.4	14.2	13.1	12.3
Crude Death Rate(CDR)	6.8	7.0	7.1	7.4	7.8
Infant Mortality Rate(IMR)	12.1	11.1	10.0	9.2	8.4
Under-5 mortality rate	14.1	13.0	11.8	11.0	10.1
Total Fertility Rate(TFR)	1.8	1.8	1.8	1.8	1.8
Life Expectancy-Male	70.8	72.0	73.2	74.2	75.2
Life Expectancy-Female	76	76.8	77.6	78.1	78.6

Source: - Office of the Registrar General, 2006

Table 3.6 enunciates the demographic features of the state of Kerala. While Total Fertility Rate remains unchanged throughout, life expectancy of male and female are projected to increase over the years. And within this, life expectancy of female is higher than that of male implying larger segments of widowhood in the state.

Figure 3.2

Population Pyramid: - A Kerala Snapshot



Source: Irudayarajan & James (2007)

Figure 3.2 indicates the age pyramid which implies that relatively larger child population and middle-aged population of the year 2001 will gradually be absent and by the year 2061, the child and younger population will shrink, and the aged population will bulge drastically.

Table 3.7

Speed of Population Ageing in Kerala.

Population aged 60+ reaches specified per cent of total population	Years reached	No. of years required
8per cent	1986	-
10per cent	1996	10
12per cent	2011	15
14per cent	2016	5
16per cent	2021	5
18per cent	2026	5

Source: Leela Gulati and S. Irudayarajan (1988)

It is evident from table 3.7 that only 5 years are required between the years 2011-2026 to scale up the 60 plus population while ten years were required for the additional increase of 2% of 60+ during 1986 – 1996. This is a chilling reminder of the fact that the momentum of ageing is becoming stronger in Kerala.

CHAPTER IV
DATA AND METHODOLOGY

This chapter mainly discusses the statistical methods, definition of variables, equations of variables and the types of tools which are applied in the thesis. The study is based on randomly selected 720 cross section units by collecting the data from Ernakulam district of Kerala by using an amalgam of random sampling and systematic sampling method. Ernakulam district is selected for the study as it has recorded largest number of elderly groups of 60 and above in the state (Economic Review 2023). In the first stage, out of seven taluks of Ernakulam, Paravoor taluk was randomly selected. In the second stage, out of 13 villages in the taluk, Puthanvelikkra village was selected. In the final stage, out of 18 wards of the given village, ward number 11 was selected. This ward has 1458 adult voters as per the official website of Election Commission of Kerala. For this population, as per sample size calculator, a sample of 733 is required to have a confidence interval of 95%. To identify sample from the voters' list, systematic sampling method was used based on a sample interval of 2 which is calculated by dividing the total population of 1458 with the sample size of 733. Being a probability sampling technique, a fusion of random sampling and systematic sampling technique combines both random sampling and systematic sampling where samples are selected at a non-zero chance. Apart from this, this technique is less biased and more representative as it assures randomness at the initial selection point. In the study the sample interval is 2 which is selected at random and the data is collected at regular or fixed intervals. Although the required sample size was 733, 13 respondents were excluded during the data screening stage due to missing values, inconsistent responses, lack of cooperation, and severe skewness in certain variables. Skewness in the data was identified through descriptive statistical analysis and graphical inspection. Specifically, skewness statistics were computed for key continuous variables, and variables exhibiting extreme skewness values beyond the acceptable range (±2) were closely examined. In addition, histograms and box plots were used to visually assess

the distribution of responses and to identify extreme outliers and asymmetric patterns. Observations contributing to excessive skewness or extreme outliers that could adversely affect the reliability and efficiency of the regression estimates were excluded from the analysis. Consequently, after removing such observations, the final sample size was fixed at 720 respondents**.** A pilot study of 100 sample size was conducted and that Test-retest reliability and Construct Validity methods were conducted. Accordingly, some questions were deleted and finally a well-structured interview schedule was prepared for the collection of data. Appropriate statistical tools such as chi-square test, cross tabulation and regression techniques like Ordered Probit models were applied, the details of which are given below.

Table 4.1

District-wise Distribution of Population of Aged 60+

Si. No	Districts	No of aged 60+ (in numbers)
1	Kasargod	129568
2	Kannur	321999
3	Wayanad	78760
4	Kozhikode	363839
5	Malappuram	345022
6	Palakkad	336646
7	Thrissur	431558
8	**Ernakulum**	**453484**
9	Idukki	129443
10	Kottayam	313637
11	Alappuzha	324410
12	Pathanamthitta	214540
13	Kollam	351818
14	Thiruvananthapuram	433155

Source: Economic Review 2023, Kerala State Planning Board

4.1 Theoretical framework of the study: Active Ageing Model of WHO

This research empirically tested WHO active ageing model in Kerala. The WHO Active Ageing model (2002) is based on three main pillars: participation, health, and security, with the goal of enhancing quality of life as people age. The model encompasses six groups of determinants, including health and social services, behavioral factors, personal factors, physical environment, social factors, and economic factors. Each group includes several aspects, such as promoting health and preventing disease, physical activity, social support, and economic security. These determinants are embedded in cultural and gender contexts and are meant to be implemented through national health plans worldwide.

According to the WHO, the key aspects of active ageing include autonomy, independence, quality of life, and healthy life expectancy. Autonomy refers to the ability to control and make personal decisions about one's daily life, while independence refers to the capacity to live independently in the community with little or no assistance. Quality of life is a complex concept that includes physical health, psychological state, social relationships, personal beliefs, and the environment. Finally, healthy life expectancy refers to how long people can expect to live without disabilities.

The six groups of determinants that are included in the model are:

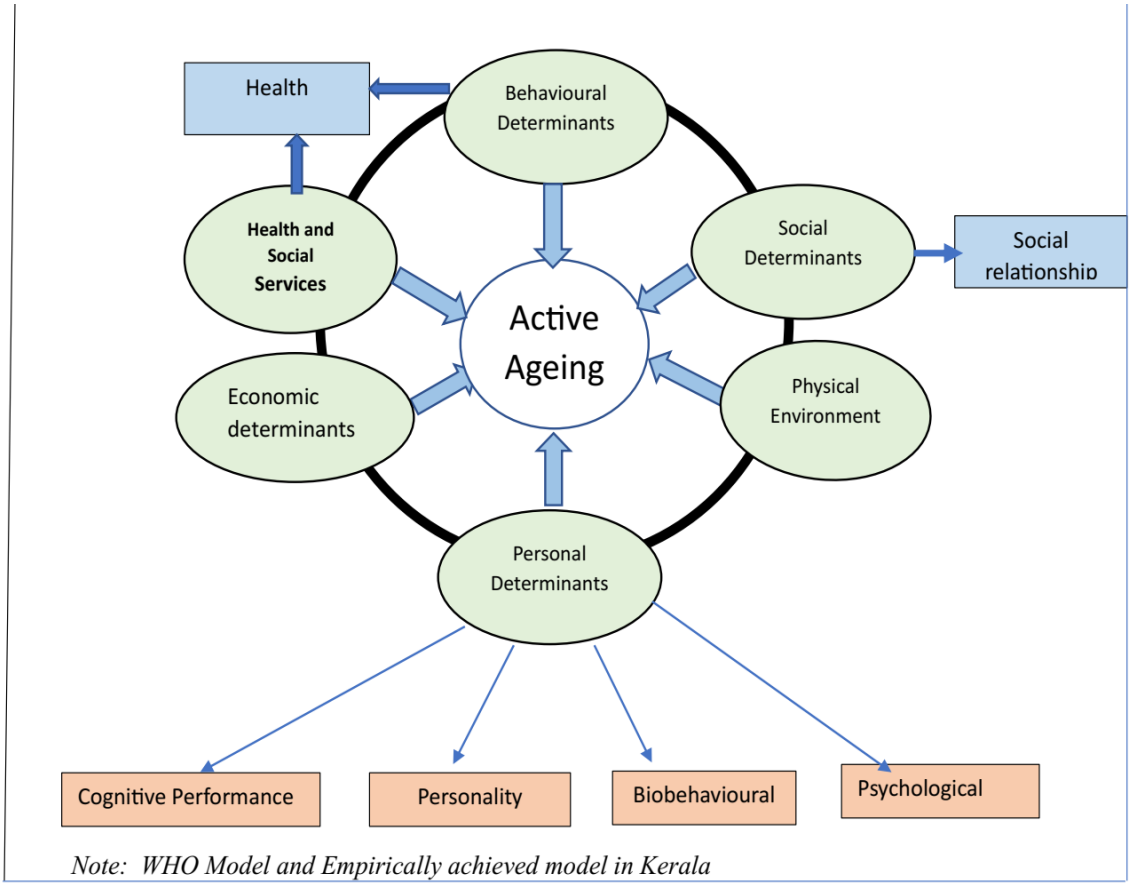
1. ***Health and social services***: This includes promoting health and preventing disease, providing health services, continuous care, and mental health care.
2. ***Behavioral:*** This includes smoking, physical activity, food intake, oral health, alcohol, and meditation.
3. ***Personal:*** This includes biology and genetics and psychological factors.
4. ***Physical environment***: This includes a friendly environment, safety houses, falls, and absence of pollution.

5. ***Social:*** This includes social support, violence and abuse, and education.

6. ***Economic and social security***: This includes wage, social security, and work, embedded in cultural and gender.

Figure 4.1

WHO Model and Empirically achieved Model in Kerala



Note: WHO Model and Empirically achieved model in Kerala

Source: Paul et al (2012)

The WHO Active Ageing model suggests that active ageing is an outcome of different determinants, which can identify individuals who are more at risk or more likely to age actively. While the model has been widely adopted in Europe, empirical evidence on its operative definition and criteria remains scarce. In the United States, researchers often use the parallel concept of "successful ageing" instead of active ageing.

4.2 Statistical Methods

The following heading discusses the methods used in a research study to analyze data related to active ageing and its dimensions in Kerala. The study uses various statistical tools to achieve its objectives, including univariate analysis, cross-tabulation, and chi-square tests, as well as descriptive statistics for regression analysis. The study also employs Ordinary Least Squares (OLS) and Ordered Probit Models to test the impact of dimensions of active ageing on self-reported status of active ageing in Kerala. The content provides an overview of each method used in the study and explains how it contributes to the research findings. The data were analyzed using statistical software such as Excel, SPSS, and STATA.

4.2.1 Univariate analysis

To analyze the data, the study used descriptive statistics such as frequencies, percentages, means, and standard deviations to describe the distribution of responses. The study checked the reliability of the Likert scale questions using the Cronbach's alpha coefficient. The study also checked for normality of the data using the Shapiro-Wilk test and the visual inspection of histograms and normal probability plots.

The results of the study were presented in tables to illustrate the distribution of responses and the relationships between variables.

4.2.2 A Cross-tabulation and Chi-Square test Approach

The study aimed to investigate how active ageing and its dimensions differ across different demographic variables. For analysis, the variables like age, gender, marital status, religion, caste, employment status etc are used. The dimensions of active ageing mainly include variables in Activities of Daily Life, happiness, loneliness, educational status, social support, cognitive skill and level of access to labour market. To achieve this objective, the study used cross-tabulation and chi-square tests as the analytical tools. To analyze the data, the study used cross-tabulation to examine the relationship between demographic variables and active

ageing dimensions. The cross-tabulation table was used to calculate the frequencies and percentages of each variable and dimension. The chi-square test was then used to determine the significance of the relationship between the demographic variables and active ageing dimensions.

The chi-square test is a statistical method used to determine if there is a significant association between two categorical variables. The equation for the Chi-square test is:

$$\chi^2 = \sum (O - E)^2 / E \text{ ……..(1)}$$

where:

χ^2 = chi-square test statistic

O = observed frequency for each category in a contingency table

E = expected frequency for each category in a contingency table, calculated as (row total x column total) / grand total

The equation involves calculating the difference between the observed and expected frequencies for each category, squaring the difference, dividing it by the expected frequency, and summing up these values for all categories in the contingency table. The resulting value of χ^2 is compared to a critical value from the chi-square distribution to determine if there is a statistically significant association between the two variables.

The significance level for the chi-square test was set at 0.01, which indicates that a p-value less than 0.01 is considered statistically significant. If the chi-square test indicated a significant relationship between the demographic variable and active ageing dimensions, a post-hoc analysis was conducted using the Bonferroni correction to identify which groups were significantly different from each other.

4.2.3 Descriptive statistics for regression analysis

Descriptive statistics are used to summarize and describe the characteristics of a dataset. In this study, descriptive statistics are used to provide an overview of

the sample and the variables used in the analysis. The sample consists of individuals from the state of Kerala in India. The variables used in the analysis include the composite indexes of various dimensions of active ageing, as well as the self-assessed reported status of active ageing.

4.2.4 Ordinary Least Squares (OLS) and Ordered Probit Models

The methodology for this research on the impact of dimensions of active ageing on the self-reported status of active ageing in Kerala involves using the framework developed by the World Health Organization (WHO). The dependent variable in the study is active ageing, which is self-reported by participants. The study will consider seven composite indexes of various dimensions of active ageing as independent variables. These dimensions include behavioral factors, personal well-being, social environment, health and social services, physical environment, economic status, and social security.

The study employs Ordinary Least Squares (OLS) estimation to determine the impact of the various dimensions of active ageing on the present self-assessed status of active ageing in Kerala. Additionally, the Ordered Probit model is used to test the robustness of the OLS results. The OLS model is suitable for estimating the effects of multiple independent variables on a continuous dependent variable, while the Ordered Probit model is appropriate for estimating the effects of multiple independent variables on an ordered categorical dependent variable. Both models can be applied in our context.

The Ordinary Least Squares (OLS) regression equation for this study is:

Active Ageing = β0 + β1 Behavioral Index + β2 Personal Index + β3 Social Environment Index + β4 Health and Social Service Index + β5 Physical Environment Index + β6 Economic Index + β7 Social Security Index + ε ……………………..(1)

Where:

Active Ageing is the dependent variable, which is a self-assessed reported status of active ageing.

Behavioral Index, Personal Index, Social Environment Index, Health and Social Service Index, Physical Environment Index, Economic Index, and Social Security Index are the independent variables, which are composite indexes of various dimensions of active ageing.

β0 is the intercept.

β1-β7 are the coefficients for the independent variables.

ε is the error term.

The study estimates OLS regression equations for the total sample, disaggregated by gender and religion, to investigate how the effects of various dimensions of active ageing vary by gender and religion in Kerala. The regression analysis will help to determine the significance of the independent variables on active ageing status, the strength of the relationships, and the direction of the relationships.

The Ordered Probit regression equation for this study is:

Pr(Active Ageing ≤ k) = Φ (αk + β1 Behavioral Index + β2 Personal Index + β3 Social Environment Index + β4 Health and Social Service Index + β5 Physical Environment Index + β6 Economic Index + β7 Social Security Index)…….(2)

Where:

Active Ageing is the dependent variable, which is a self-assessed reported status of active ageing.

k represents the possible values of the dependent variable, which are ordered categorical variables.

Behavioral Index, Personal Index, Social Environment Index, Health and Social Service Index, Physical Environment Index, Economic Index, and Social Security Index are the independent variables, which are composite indexes of various dimensions of active ageing.

Φ is the standard normal cumulative distribution function.

αk is the cut-point for the k^{th} category.

$\beta 1$-$\beta 7$ are the coefficients for the independent variables.

In short, the methodology adopted for the primary objective of the thesis involves using the WHO framework for active ageing, employing OLS and Ordered Probit models for analysis, and estimating regression equations for the total sample and disaggregated by gender and religion to investigate the impact of various dimensions of active ageing on the self-assessed status of active ageing in Kerala.

To conclude, we may say that the chapter discussed elaborately the statistical methods used, tools applied and econometric applications employed in the thesis. The dependent and independent variables have been defined accurately from which logical conclusions are arrived at in the ensuing chapters.

CHAPTER V

SOCIO - ECONOMIC CHARACTERISTICS OF ELDERLY POPULATION IN THE STUDY AREA

This chapter is devoted to the analysis of the socio-economic condition and divergent dimensions of active ageing among the elderly. For analysis, the variables like age, gender, marital status, religion, caste, employment status etc. are used. The dimensions of active ageing mainly factored in variables in Activities of Daily Life, happiness, loneliness, educational status, social support, cognitive skill, level of access to labour market and the like.

5.1 Socio-Economic features of the respondents

The table 5.1 contains information on the socio-economic characteristics of elderly population. The gender distribution of the sample showed that 44.3% were female and 55.7% were male. In terms of marital status, the majority were married (69.2%), followed by widows (22.9%), unmarried (3.5%), widowed (2.1%), and others (2.3%). Regarding religious affiliation, 69.4% were Hindus, 19.0% were Muslims, and 11.5% were Christians. Most of the participants were from the general category (46.2%), followed by OBC (43.3%), SC (10.0%), ST (0.3%), and others (0.1%). The family structure of the elderly population was mostly nuclear (89.2%), with only 10.8% from joint families. Lastly, many of the participants were not working (51.7%), while 47.2% were employed, and only 1.1% were classified as "other". These socio-economic characteristics provide useful insights for understanding the elderly population and identifying services and policies that cater to their needs. The infer of this finding is that the elderly population in Ernakulam district, Kerala, is predominantly male, married, and residing in nuclear families, with a majority not engaged in formal employment. These findings suggest that the elderly have moderate social and economic support, with limited extended family support and potential vulnerability in financial and social domains.

Table 5.1

Socio- Economic Profile of Respondents

	Category	frequency	Percentage
Gender	Male	401	55.7
	Female	319	44.3
Marital status	Married	498	69.2
	Unmarried	25	3.5
	Widow	165	22.9
	widowed	15	2.1
	Others	17	2.3
Religion	Hindu	500	69.4
	Muslim	137	19
	Christian	83	11.5
Caste	General	333	46.2
	OBC	312	43.3
	SC	72	10.0
	ST	2	3
	Others	1	1
Type of family	Joint	78	10.8
	Nuclear	642	89.2
Employment status	Not working	372	51.7
	Working	340	47.2
	Others	8	1.1
Total		720	100

Source: Primary data

5.1.1 Age and family size of elderly

The table 5.2 provides the descriptive statistics of two variables, age and family size, for a sample of 720 elderly individuals. The N column shows that there were 720 participants in the sample for both age and family size. The Minimum column indicates that the smallest age value in the sample was 60, while the smallest

family size value was 1. The Maximum column shows that the largest age value in the sample was 103, while the largest family size value was 12. The Mean column indicates that the average age of the participants was 69.83, and the average family size was 4.58 members. The Std. Deviation column shows that the age of the participants varied by approximately 6 years around the mean value, while the family size varied by approximately 1.9 members around the mean value. The minimum income value in the sample was 500, and the maximum was 1,20,000. The mean income was 27,233 units of currency used, which is a measure of the average income of the participants. The standard deviation of 55,666.987 indicates that the income of the participants varied considerably around the mean value. Finally, the Valid N (listwise) row indicates that all 720 participants had complete data for both age and family size. Overall, these descriptive statistics provide valuable information about the age and family size distribution of the elderly population in the sample, and can be used for framing policy decisions and services aimed at catering to their needs.

Table 5.2

Descriptive Statistics of age and Family Size

	N	Minimum	Maximum	Mean	Std. Deviation
Age	720	60	103	69.83	6.161
Family Size	720	1	12	4.58	1.897
Valid N (listwise)	720				
		Descriptive Statistics			
	N	Minimum	Maximum	Mean	Std. Deviation
Income	715	500	120000	27233	55666.987
Valid N (listwise)	715				

Source: Primary data

5.2 Active ageing among the respondents

Active ageing refers to the process of optimizing opportunities for physical, social, and mental health to improve the quality of life of individuals as they age. It involves participation in social, economic, and cultural activities that enhance well-being and independence, as well as the adoption of healthy behaviour and the management of chronic conditions (World Health Organization, 2015).

Table 5.3:

Active Ageing

Active ageing	Frequency	Percent
Never	151	21.0
Rarely	56	7.8
Sometimes	244	33.9
Always	269	37.4
Total	**720**	**100.0**

The table 5.3 indicates that a significant proportion of the respondents do not engage in active ageing, which suggests a need for interventions to promote and facilitate active ageing. National Institute of Health 2020 reported that encouraging older adults to participate in physical activity, social and cultural activities, and continuing education programs can enhance well-being and reduce the risk of chronic diseases, as well as improve cognitive function. Additionally, United Nations 2019 subscribed to the view that providing support for older adults to maintain their independence, such as home modifications or assistive devices, can also promote active ageing. As can be seen, table 5.3 shows the frequency and percentage of respondents who reported *never, rarely, sometimes or always,* experiencing active ageing. 37.4% of the participants reported always experiencing active ageing, 21.0% never experienced it, 7.8% rarely experienced it, and 33.9% sometimes experienced it.

5.3 DIMENSIONS OF ACTIVE AGEING

5.3.1 Behavioural Factors

The tables provide information on different elderly-related issues experienced by the respondents in the sample.

Table 5.4

Health Status of Elderly

Health status Health status	Frequency	Percent
Very Poor	8	1.1
Poor	41	5.7
Reasonable	155	21.5
Good	338	46.9
Very Good	178	24.7
Total	**720**	**100.0**

Source: Primary data

The table 5.4 shows the frequency and percentage of respondents who reported their health status as very poor, poor, reasonable, good or very good. Many of the participants, 46.9%, reported their health status as good, 24.7% reported very good, while only 5.7% reported poor.

Table: 5.5

Sleep Deprivation of Elderly

Sleep deprivation	Frequency	Percent
Very Serious	140	19.4
Serious	64	8.9
Moderately Serious	140	19.4
Less Serious	112	15.6
Not at all Serious	264	36.7
Total	**720**	**100.0**

Source: Primary data

The table 5.5 shows the frequency and percentage of respondents who reported their sleep deprivation status as very serious, serious, moderately serious, less serious or not at all serious. Most of the participants, 36.7%, reported that they did not experience sleeping deprivation, while 19.4% reported moderately serious and very serious deprivation.

Table 5.6

ADL Status of Elderly

ADL status	Frequency	Percent
Very Poor	5	0.7
Poor	21	2.9
Reasonable	72	10.0
Good	191	26.5
Very Good	431	59.9
Total	**720**	**100.0**

Source: Primary data

The table 5.6 shows the frequency and percentage of respondents who reported their ADL (Activities of Daily Living) status as *very poor, poor, reasonable*, *good or very good*. Most of the participants, 59.9%, reported their ADL status as very good, while only 2.9% reported poor.

Table 5.7

Optimism of Elderly

Optimism of elderly	Frequency	Percent
Very poor	13	1.8
Poor	61	8.5
Reasonable	231	32.1
Good	230	31.9
Very good	185	25.7
Total	**720**	**100.0**

Source: Primary data

The table 5.7 shows the frequency and percentage of respondents who reported their optimism status as *very poor, poor, reasonable*, *good or very good.* 32.1% of the participants reported their optimism status as reasonable while 1.8% reported very poor.

Table 5.8

Visionary Status (eye) of Elderly

Visionary status	Frequency	Percent
Very poor	2	0.3
Poor	32	4.4
Reasonable	101	14.0
Good	429	59.6
Very good	156	21.7
Total	**720**	**100.0**

Source: Primary data

The table 5.8 shows the frequency and percentage of respondents who reported their visionary status (eye) as *very poor, poor, reasonable, good, very good*. Many of the participants, 59.6%, reported their visionary status as good, while only 4.4% reported poor.

Table 5.9

Audibility of Elderly

Audibility of elderly	Frequency	Percent
Very poor	12	1.7
Poor	44	6.1
Reasonable	86	11.9
Strong	228	31.7
Very strong	350	48.6
Total	**720**	**100.0**

Source: Primary data

The table 5.9 shows the percentage distribution of the audibility status of the elderly respondents. Out of 720 respondents, 48.6% reported very strong audibility followed by strong (32%) and reasonable (12%) audibility conditions.

Table 5.10

Pulmonary Status of Elderly

Pulmonary status	Frequency	Percent
Very serious	85	11.8
Serious	74	10.3
Moderately Serious	129	17.9
Less serious	119	16.5
Not at all serious	313	43.5
Total	**720**	**100.0**

Source: Primary data

The table 5.10 dilates upon the pulmonary status of the elderly. 44% of the respondents do not have any pulmonary issues followed 17.9% having moderately serious conditions, 10.3% having serious conditions, and 11.8% very serious conditions. These results suggest that most of the elderly respondents had no serious pulmonary conditions. However, a significant minority did report serious or very serious conditions, which may require medical attention and intervention.

These tables provide useful insights into the elderly population's experiences and can be used to chart out policies and programs designed to improve their overall well-being.

Alcohol, smoking and meditation habits among the elderly

The tables show the alcohol consumption, smoking habits, and meditation and yoga practices of elderly respondents.

Table 5.11

Alcohol consumption of elderly

Alcohol consumption	Frequency	Percent
Always	63	8.8
Sometimes	102	14.2
Occasionally	56	7.8
Rare	14	1.9
Never	485	67.4
Total	**720**	**100.0**

Source: Primary data

Table 5.11 reveals that 67.4% of the elderly never consumed alcohol, while only 8.8% of them consumed alcohol regularly.

Table 5.12

Smoking Habits of Elderly

Smoking habits	Frequency	Percent
Always	100	13.9
Sometimes	93	12.9
Occasionally	41	5.7
Rare	11	1.5
Never	475	66.0
Total	**720**	**100.0**

Source: Primary data

Similarly, in the table 5.12, it can be observed that 66% of the elderly never smoked, while only 13.9% of them smoked regularly.

Table 5.13

Meditation and Yoga of Elderly

Mediation and yoga	Frequency	Percent
Never	127	17.6
Rare	44	6.1
Occasionally	94	13.1
Sometimes	149	20.7
Always	306	42.5
Total	**720**	**100.0**

Source: Primary data

In the table 5.13, it is found that 42.5% of the elderly always practice meditation and yoga, while 17.6% of them never practice it. The remaining elderly respondents practice meditation and yoga rarely, occasionally, or sometimes. Overall, the tables indicate that most of the elderly respondents do not consume alcohol or smoke regularly, and a considerable percentage of them practice meditation and yoga regularly.

Happiness and loneliness of elderly

Happiness is a subjective state of well-being characterized by feelings of contentment, joy, and life satisfaction. For elderly individuals, it is influenced by factors such as health, social relationships, financial security, and a sense of purpose. Table 5.14 highlights the levels of happiness among the elderly respondents. The data shows that 16.5% of the respondents reported being happy always, while 34.3% indicated being happy most often, reflecting a significant proportion of elderly individuals experiencing positive well-being. Additionally, 29.3% of respondents reported being happy sometimes, suggesting moderate but inconsistent feelings of happiness. However, a notable proportion reported negative experiences, with 16.9% stating they were happy rarely and 2.9% indicating they were not happy at all.

Table 5.14

Level of Happiness among Elderly

Level of happiness	Frequency	Percent
Not at all	21	2.9
Rarely	122	16.9
Sometimes	211	29.3
Most often	247	34.3
Always	119	16.5
Total	**720**	**100.0**

Source: Primary data

Loneliness is a subjective feeling of isolation, disconnection, or lack of companionship, often experienced when an individual perceives a gap between their desired and actual social interactions. For elderly individuals, loneliness can significantly impact mental and physical health, influencing their overall well-being.

Table 5.15

Loneliness of Elderly

Loneliness	Frequency	Percent
Always	63	8.8
Most often	96	13.3
Sometimes	160	22.2
Rarely	144	20.0
Not at all	257	35.7
Total	**720**	**100.0**

Source: Primary data

Table 5.15 presents the distribution of loneliness levels among the elderly respondents. The data reveals that 35.7% of respondents reported *not feeling lonely at all*, indicating a significant proportion who maintain strong social connections or emotional resilience. On the other hand, 22.2% of respondents reported feeling

lonely *sometimes*, and 20% reported feeling lonely *rarely*, reflecting moderate experiences of loneliness among a substantial share of the elderly population. However, 13.3% of respondents indicated feeling lonely *most often*, and 8.8% reported feeling lonely *always*, highlighting a vulnerable minority facing persistent isolation.

Cognitive and Personality Status of the Elderly

Cognitive skills refer to an individual's mental capabilities, including memory, attention, reasoning, and problem-solving abilities, which are critical for daily functioning and decision-making. Personality status encompasses traits and behaviors that influence how individuals interact with others and adapt to their environment, reflecting their emotional and social well-being.

Table 5.16

Cognitive Skill of Elderly

Cognitive skill	Frequency	Percent
Very Poor	38	5.3
Poor	164	22.8
Moderate	237	32.9
Above Moderate	136	18.9
Excellent	145	20.1
Total	**720**	**100.0**

Source: Primary data

Table 5.16 highlights the cognitive skill levels of the elderly respondents. Among them, 18.9% demonstrated *above moderate* cognitive abilities, while 20.1% showed *excellent* cognitive skills, indicating a substantial share of elderly individuals with strong mental abilities. The largest group, 32.9%, reported having *moderate* cognitive skills, representing an average level of mental capability. Conversely, 22.8% exhibited *poor* cognitive skills, and 5.3% were categorized as having *very poor* cognitive skills, pointing to a significant minority who may face challenges in cognitive functioning**.**

Personality status refers to the overall assessment of an individual's enduring traits, behaviors, and emotional characteristics that shape how they interact with their environment, relationships, and challenges in life. It encompasses dimensions such as openness, conscientiousness, emotional stability, sociability, and adaptability. For elderly individuals, personality status can significantly impact their social engagement, resilience, mental health, and quality of life, influencing their ability to maintain meaningful connections and cope with ageing-related changes.

Table 5.17

Personality Status of Elderly

Personality status	Frequency	Percent
Very Poor	6	0.8
Poor	37	5.1
Moderate	274	38.1
Above Moderate	175	24.3
Excellent	228	31.7
Total	**720**	**100.0**

Source: Primary data

Table 5.17 provides insights into the personality status of the elderly respondents. A noteworthy 31.7% of the reported having *excellent* personality traits, while 24.3% were categorized as having *above moderate* personality status, signifying a considerable proportion with positive personality attributes. The majority, 38.1%, had a *moderate* personality status, reflecting average emotional and social adaptability. On the lower end, 5.1% of respondents reported *poor* personality status, and only 0.8% were categorized as having *very poor* status, highlighting a small group needing greater support in social and emotional well-being.

These findings highlight the diverse cognitive and personality profiles of the elderly, emphasizing the importance of supporting those with lower cognitive abilities and personality traits to improve their quality of life. Promoting cognitive

stimulation through mental exercises and fostering social engagement can enhance these dimensions of well-being.

5.3.2 Social - Environment Factors of Active Ageing

The tables 5.18 - 5.20 provide information about three social environmental factors that can impact active ageing: educational status of the elderly, level of social support and social network, and level of violence and abuse.

Table 5.18

Educational Status of Elderly

Educational status	Frequency	Percent
No education	113	15.7
Primary	230	31.9
Secondary	188	26.1
Higher Secondary	58	8.1
Degree and above	131	18.2
Total	**720**	**100.0**

Source: Primary data

The table 5.18 shows that among the 720 elderly people surveyed, 31.9% had completed primary education, while 26.1% had completed secondary education. 18.2% had a degree or higher, 8.1% had completed higher secondary education, and 15.7% had received no formal education. This highlights the need for efforts to improve access to education for the elderly, particularly for those who have not received any formal education.

Table 5.19

Level of Social Support and Social Network

Level of social support and social network	Frequency	Percent
Never	41	5.7
Rare	46	6.4
Occasionally	119	16.5
Sometimes	101	14.0
Always	413	57.4
Total	**720**	**100.0**

Source: Primary data

The table 5.19 provides information on the level of social support and social network among the elderly. It shows that 57.4% of the respondents reported that they always received social support, while only 5.7% reported that they never received any support. 14% reported receiving support sometimes, while 16.5% received support occasionally. Only 6.4% reported receiving support rarely. This highlights the importance of social support networks in promoting active ageing.

Table 5.20

Level of Violence and Abuse

Level of violence and abuse	Frequency	Percent
Always	23	3.2
Rare	148	20.6
Occasionally	40	5.6
Sometimes	117	16.2
Not at all	392	54.4
Total	**720**	**100.0**

Source: Primary data

The table 5.20 highlights the level of violence and abuse experienced by the elderly. It shows that 54.4% reported Not at all levels of violence and abuse, while 20.6% reported rare occurrences of such incidents. 16.2% reported sometimes experiencing violence and abuse, while only 5.6% reported occasional incidents. 3.2% reported experiencing violence and abuse always. These results emphasize the need for preventive measures and interventions to reduce the prevalence of violence and abuse against the elderly.

5.3.3 Health and Social services of Active Ageing

The tables vividly convey three aspects of health and social services that can impact active ageing: illness status of the elderly, level of access to health services, and the physical and mental health status of the elderly.

Table 5.21

Illness Status of Elderly

Illness status	Frequency	Percent
4 or more illness	150	20.8
3 illness	190	26.4
2 illness	216	30.0
1 illness	36	5.0
No illness	128	17.8
Total	**720**	**100.0**

Source: Primary data

The table 5.21 shows that among the 720 elderly people surveyed, the majority (77.2%) reported having two or more illnesses. Specifically, 30% reported having two illnesses, 26.4% having three illnesses, and 20.8% having four or more illnesses. Only 5% reported having one illnesses, while 17.8% reported having one illness. This highlights the importance of addressing the health needs of the elderly, particularly for those who have multiple illnesses.

Table 5.22

Level of Access to Health Service

Level of access to health service	Frequency	Percent
Poor	74	10.3
Rare	65	9.0
Occasionally	167	23.2
Sometimes	117	16.2
Always	297	41.2
Total	**720**	**100.0**

Source: Primary data

The table 5.22 throws light on the level of access to health services among the elderly. It shows that 41.2% of the respondents reported always having access to health services, while 23.2% reported occasional access. Only 10.3% reported poor access to health services, while 16.2% reported access sometimes, and 9% reported rare access. This highlights the need for efforts to improve access to health services for the elderly, particularly for those who experience poor or rare access.

Table 5.23

Level of Physical and Mental Health Status Elderly

Level of physical and mental health status	Frequency	Percent
Very Bad	7	1.0
Bad	122	16.9
Reasonable	315	43.8
Good	193	26.8
Very good	83	11.5
Total	**720**	**100.0**

Source: Primary data

The table 5.23 highlights the physical and mental health status of the elderly. It shows that 43.8% of the respondents reported having reasonable health status, while 26.8% reported good health status. Only 1% reported very bad health status, while 11.5% reported very good health status, and 16.9% reported bad health status. This emphasizes the importance of promoting healthy ageing and preventing chronic illnesses and disability.

5.3.4 Physical environment factors of Active Ageing

The tables 5.24-5.26 convey three aspects of the physical environment that can impact active ageing: the level of friendly environment for the elderly, the status of safely house, and the level of absence of pollution in the surrounding.

Table 5.24

Level of Friendly Environment of Elderly

Level of friendly environment	Frequency	Percent
Poor	51	7.1
Rare	51	7.1
Occasionally	81	11.2
Sometimes	146	20.3
Always	391	54.3
Total	**720**	**100.0**

Source: Primary data

The table 5.24 shows that the majority of elderly respondents (54.3%) reported always having a friendly environment. However, a significant proportion (20.3%) reported having a friendly environment only sometimes, while 11.2% reported having a friendly environment occasionally. A smaller proportion (7.1%) reported poor or rare friendly environments. This highlights the importance of promoting environments that are friendly and accessible to the elderly to support their well-being and active ageing.

Table 5.25

Status of Safely House of Elderly

Status of safely house	Frequency	Percent
Very Poor	7	1.0
Poor	107	14.9
Moderate	186	25.8
Above Moderate	104	14.4
Excellent	316	43.9
Total	**720**	**100.0**

Source: Primary data

The table 5.25 discusses on the status of safely house among the elderly. It shows that 43.9% of the respondents reported having excellent safe housing, while 25.8% reported moderate safe housing. A smaller proportion (14.4%) reported having 'above moderate' safe housing, while 14.9% reported poor safe housing and 1% reported very poor safe housing. Ensuring that elderly people have safe and secure housing is important for their physical health and well-being and can support their ability to age actively.

Table 5.26

Level of Absence of Pollution in surroundings

Level of Pollution	Frequency	Percent
Very poor (High Pollution)	374	51.9
Poor	130	18..1
Moderate	175	24.3
Low	37	5.1
No Pollution	4	0.6
Total	**720**	**100.0**

Source: Primary data

The table 5.26 provides insights into the perceived absence of pollution in the surroundings of elderly respondents. A significant portion of the respondents (51.9%) experiencing very poor pollution, indicating a concerning level of environmental degradation in their living areas. Additionally, 18.1% categorized their surroundings as having poor *pollution*, further emphasizing the prevalence of polluted environments.

On the other hand, 24.3% of respondents indicated experiencing a *moderate level of pollution*, while a much smaller proportion, 5.1%, reported *low pollution*. Only 0.6% of the respondents living in areas with *no pollution*. These findings underline the pressing need to address environmental issues and promote clean, healthy surroundings for the elderly. Reducing pollution can significantly contribute to their well-being, supporting active ageing and preventing pollution-related health issues.

5.3.5 Economic factors of Active Ageing

The tables 5.27-5.29 elucidate the economic factors of active ageing.

Table 5.27

Level of Economic Status

Level of economic status	Frequency	Percent
Very poor	14	1.9
Poor	137	19.0
Middle	255	35.4
Upper middle	118	16.4
High	196	27.2
Total	**720**	**100.0**

Source: Primary data

Table 5.27 shows the economic status distribution of the elderly population. The majority (35.4%) belong to the middle-income category, followed by 27.2% in the high-income category. Meanwhile, 19.0% are classified as poor, 16.4% as upper

middle, and a small proportion (1.9%) as very poor. This variation highlights a notable segment of the elderly population experiencing economic vulnerability, which could impact their ability to actively age.

Table5.28

Level of Social Security

Level of social security	Frequency	Percent
Least secured	129	17.9
Somewhat secured	58	8.1
Reasonably secured	116	16.1
Secured	123	17.1
Always secured	294	40.8
Total	**720**	**100.0**

Source: Primary data

Table 5.28 outlines the levels of social security among the elderly. "Social security" in this context refers to various sources of support, including assistance from family and relatives, government programmes such as the public distribution system, health and medical insurance, or other institutional mechanisms. A significant portion (40.8%) of the elderly population feels "always secured," suggesting strong support systems. However, a considerable percentage (17.9%) perceive themselves as "least secured," with smaller proportions distributed across "reasonably secured" (16.1%), "secured" (17.1%), and "somewhat secured" (8.1%). These findings emphasize the disparity in perceived social security levels, which may correlate with economic status. Tables 5.27 and 5.28 collectively highlight the interconnectedness of economic status and social security in shaping the active ageing experience. Individuals with higher economic status may have better access to resources, social support systems, and healthcare, contributing to higher levels of perceived social security. Conversely, those in the poor and very poor categories likely face challenges in maintaining an active and secure lifestyle.

The table 5.28 shows the level of social security, which includes always secured, least secured, somewhat secured, reasonably secured, secured, and always secured. Most of the elderly population is always secured (40.8%), followed by least secured (17.9%), reasonably secured (16.1%), secured (17.1%), and somewhat secured (8.1%).

Table 5.29

Level of Access to Labour Market

Level of access to labour market	Frequency	Percent
Not at all	175	24.3
Rarely	62	8.6
Sometimes	101	14.0
Most often	114	15.8
Always	268	37.2
Total	**720**	**100.0**

Source: Primary data

The table 5.29 shows the level of access to the labour market, with varying dimensions like *not at all, rarely, sometimes, most often and always.* It is seen that 24.3% of the elderly population have no access to the labour market followed by always (37.2%), sometimes (14.0%), most often (15.8%), and rarely (8.6%).

5.3.6 Social Security related factors of Active Ageing

This section examines the social security-related factors influencing active ageing, expanding upon the concept of social security as presented in earlier sections. While *social security* generally refers to the provision of financial or welfare support to individuals, the term *social security-related factors* here encompass additional dimensions such as sources of livelihood, types and regularity of pensions, awareness of government programs, and their perceived effectiveness. These factors collectively provide a broader understanding of the safety nets and resources available to the elderly population for achieving an active and secure life.

The tables 4.30-4.34 provide wealth of information related to social security factors of active ageing.

Table 5.30

Source of Livelihood of Elderly

Source of livelihood	Frequency	Percent
Pension	311	43.2
Depending on Family Income	160	22.2
Daily labour	227	31.5
No Source	3	.4
Other	19	2.6
Total	**720**	**100.0**

Source: Primary data

Table 5.30 indicates that pensions are the primary source of livelihood for 43.2% of the elderly, followed by daily labor (31.5%). A smaller proportion (22.2%) relies on family income, and only a negligible percentage (0.4%) has no source of livelihood. This highlights the critical role of pensions in ensuring financial security for the elderly, while also pointing to the significant reliance on labor among this group.

Table 5.31

Types of Pensions Received by Elderly

Type of pensions	Frequency	Percent
Disability Pension	16	2.2
Old Age Pension	275	38.2
Retd. Govt Employee	189	26.2
Widow Pension	92	12.8
Other	148	20.6
Total	**720**	**100.0**

Source: Primary data

Table 5.31 shows the distribution of pensions received by the elderly. Old age pensions (38.2%) are the most common, followed by pensions for retired government employees (26.2%). Other types of pensions, including widow pensions (12.8%) and disability pensions (2.2%), highlight the diversity of support systems catering to specific groups.

Table 5.32

Regularity of pension

Regularity of pension	Frequency	Percent
No	146	20.3
Yes	574	79.7
Total	**720**	**100.0**

Source: Primary data

As seen in Table 5.32, 79.7% of the elderly population receives their pensions regularly, whereas 20.3% face irregularities. Regular pension disbursement is vital for maintaining financial stability, and the significant minority experiencing irregularities warrants policy attention.

Table 5.33

Aware of Government Programmes for Elderly

Aware of Govt. Programmes	Frequency	Percent
No	326	45.3
Yes	394	54.7
Total	**720**	**100.0**

Source: Primary data

Table 5.33 highlights that 54.7% of the elderly population is aware of government programs designed for their welfare, while 45.3% remain unaware. Key initiatives aimed at supporting the elderly include the Indira Gandhi National Old Age Pension Scheme (IGNOAPS), which provides financial assistance to senior citizens below the poverty line, and the National Programme for Health Care of the

Elderly (NPHCE), which focuses on delivering specialized healthcare services and free medicines. Other programs, such as the Vayoshreshtha Samman, recognize contributions by elderly individuals, while the Integrated Programme for Senior Citizens (IPSrC) funds NGOs to run old age homes and day-care centers. In Kerala, the Vayomithram Scheme specifically caters to elderly residents by providing health services, medicines, and palliative care. The relatively higher level of awareness (54.7%) may be attributed to Kerala's strong literacy rate and community-oriented governance. However, the significant proportion of the elderly population (45.3%) who remain unaware points to the need for more effective outreach initiatives, such as targeted awareness campaigns and enhanced involvement by local government bodies, to ensure broader inclusion of the elderly in these welfare programs. This lack of awareness may be attributed to several factors: limited access to information for those living in remote or rural areas, low engagement with digital or print media among some elderly groups, language or literacy barriers for specific sub-groups, and inadequate proactive dissemination by local authorities. Additionally, some programs are complex or fragmented across multiple agencies, which may make it difficult for the elderly to fully understand their entitlements.

In Kerala, the programmes aimed at and intended for ameliorating the lot of the aged include Palliative care, Dementia care, Vayoposhanam, Vayoamrutham, Mandhahasam scheme,Vayoraksha scheme, Sayamprabha scheme, Vayomaithri programme, Vayomithram programme,and Integrated programme for older persons. These multi-pronged initiatives of the State look after the social, emotional and physical needs of the aged. It also shows the unflinching commitment of the State to integrate health care and community participation to shore up the quality of life of the aged.

Table 5.34

Assessment of Effective of Government Programmes for Elderly

Effectiveness of government Programmes	Frequency	Percent
Not at all Effective	213	29.6
Moderately Effective	196	27.2
Somewhat Effective	173	24.0
Always Effective	138	19.2
Total	**720**	**100.0**

Source: Primary data

Table 5.34 illustrates the perceptions of the elderly regarding the effectiveness of government programs. While 19.2% believe these programs are always effective, 29.6% consider them not effective at all, and the remainder express moderate or mixed views. These findings point to areas for improvement in the design and implementation of social security programs.

The analysis of Tables 5.30–5.34 highlights critical aspects of social security-related factors in active ageing. Pensions emerge as the backbone of financial security, but the significant reliance on daily labor and family income indicates gaps in comprehensive coverage. Furthermore, while awareness of government programs is relatively high, perceptions of their effectiveness vary widely, with a substantial portion expressing dissatisfaction.

5.4 Conclusion

The above discussion revealed many aspects of the aged community such as their level of happiness, Activities of Daily Life, absence from pollution, source of livelihood, health and economic status, social security, status of house, cognitive skill, educational status, social support, alcohol hand smoking habit, meditation and yoga, sleep deprivation and the like. It is discerned that elderly differ in terms of all these dimensions and that they invariably influence their overall economic and social wellbeing. This will also enable the government to pick and choose the best policy prescriptions to perk up the socio-economic conditions of the aged.

CHAPTER VI
GENDER SPECIFIC EXAMINATION OF ACTIVE AGEING IN KERALA; A WHO PERSPECTIVE

As the population of older adults continues to grow, promoting "active ageing" has become an essential strategy for enhancing the well-being and quality of life of the elderly. The World Health Organization (WHO) has developed a comprehensive framework for active ageing, which includes several dimensions such as health, economic, personal and security etc. The dimensions of active ageing mainly factored in variables in Activities of Daily Life, happiness, loneliness, educational status, social support, cognitive skill, level of access to labour market and the like

. While there has been a considerable amount of research on active ageing, very few studies have explored the gender-specific variations in the dimensions of active ageing in India, particularly in Kerala.

This chapter focuses on the gender-specific examination of WHO active ageing and its dimensions in Kerala. Kerala is one of the rapidly ageing states in India, and it has a high proportion of older women. The chapter has two main objectives. First, it aims to examine how the active ageing status of the elderly differs across various socio-economic groups in Kerala. Second, it seeks to explore how various dimensions of active ageing of WHO vary by gender in Kerala.

The chapter adopts a quantitative research approach, and the data for the study were obtained from a cross-sectional survey conducted in the selected regions among older adults in Kerala. The findings of the study will help to identify the factors that contribute to the active ageing of older adults and provide insights into the gender-specific dimensions of active ageing.

6.1 ACTIVE AGEING AND SOCIO-ECONOMIC GROUPS

6.1.1 Gender-wise distribution of Active ageing

Table: 6.1

Gender-wise Distribution of Active Ageing

Gender		Never	Rarely	Some times	Always	Total
Female	Count	95	23	115	86	319
	% within gender	29.8%	7.2%	36.1%	27.0%	100.0%
Male	Count	56	33	129	183	401
	% within gender	14.0%	8.2%	32.2%	45.6%	100.0%
Total	Count	151	56	244	269	720
	% within gender	21.0%	7.8%	33.9%	37.4%	100.0%
Chi square test value		38.45 (0.000)				

Source: Primary data

Table 6.1 presents the gender-wise distribution of active ageing among the elderly population of Kerala across four categories, i.e., “Never," "Rarely," "Sometimes.”, and "Always." The total sample size is 720, consisting of 319 females and 401 males. For females, the highest percentage of respondents fall under the category "Sometimes" (36.1%), followed by "Never" (29.8%), "Always" (27.0%), and "Rarely" (7.2%). For males, the highest percentage of respondents fall under the category "Always" (45.6%), followed by "Sometimes" (32.2%), "Never" (14.0%), and "Rarely" (8.2%).

The chi-square test value of 38.45 with a p-value of 0.000 indicates that there is a significant association between gender and active ageing among the elderly population of Kerala. In other words, gender plays a significant role in determining the level of active ageing among the elderly. The higher percentage of males reporting "Always" indicates that males are more likely to engage in active ageing than females in Kerala

6.1.2 Religion-wise distribution of Active ageing

Table: 6.2

Religion-wise Distribution of Active Ageing

Religion		Never	Rarely	Sometimes	Always	Total
Christian	Count	12	2	34	35	83
	% within religion	14.5%	2.4%	41.0%	42.2%	100.0%
Hindu	Count	109	51	162	178	500
	% within religion	21.8%	10.2%	32.4%	35.6%	100.0%
Muslim	Count	30	3	48	56	137
	% within religion	21.9%	2.2%	35.0%	40.9%	100.0%
Total	Count	151	56	244	269	720
	% within religion	21.0%	7.8%	33.9%	37.4%	100.0%
Chi square test value		18.34 (0.000)				

Source: Primary data

The table 6.2 shows the distribution of active ageing among respondents based on religion. It is found that the highest percentage of respondents who reported engaging in active ageing among Christians falls under the category "Always" (42.2%), followed by "Sometimes" (41.0%), "Never" (14.5%), and "Rarely" (2.4%). Among Hindus, the highest percentage of respondents who reported engaging in active ageing falls under the category "Always" (35.6%), followed by "Sometimes" (32.4%), "Never" (21.8%), and "Rarely" (10.2%). For Muslims, the highest percentage of respondents who reported engaging in active ageing falls under the category "Always" (40.9%), followed by "Sometimes" (35.0%), "Never" (21.9%), and "Rarely" (2.2%).

The chi-square test value of 18.34 with a p-value of 0.000 indicates that there is a significant association between religion and active ageing among the elderly population of Kerala. This suggests that religion plays a significant role in determining the level of active ageing among the elderly population. However, further analysis is required to identify the specific factors that contribute to this

association. The higher percentage of the Christians reporting "Always" indicates that the Christians are more likely to engage in active ageing than the Hindus and the Muslims in Kerala

6.1.3 Caste-wise distribution of Active ageing

Table 6.3

Caste-wise Distribution of Active Ageing

Caste		Never	Rarely	Some times	Always	Total
General	Count	59	24	106	144	333
	% within caste	17.7%	7.2%	31.8%	43.2%	100.0%
OBC	Count	67	28	114	103	312
	% within caste	21.5%	9.0%	36.5%	33.0%	100.0%
Others	Count	0	0	0	1	1
	% within caste	0%	0%	0%	100.0%	100.0%
SC	Count	25	4	22	21	72
	% within caste	34.7%	5.6%	30.6%	29.2%	100.0%
ST	Count	0	0	2	0	2
	% within caste	0%	0%	100.0%	0%	100.0%
Total	Count	151	56	244	269	720
	% within caste	21.0%	7.8%	33.9%	37.4%	100.0%
Chi square test value		23.45 (0.00)				

Source: Primary data

The table 6.3 the highest percentage of General caste is engaged in active ageing “always”. It has been followed by OBC, SC and Other castes. The highest percentage of OBC falls in the category “sometimes” and “rarely” whereas the highest percentage of the caste SC engaged “never” in active ageing. Only one respondent from the "Others" caste reported engaging in active ageing, and none from the ST caste.

The chi-square test value of 23.45 with a p-value of 0.00 indicates that there is a significant association between caste and active ageing among the elderly population of Kerala. This suggests that caste plays a significant role in determining the level of active ageing among the elderly population. The higher percentage of respondents from the General caste reporting "Always" suggests that they are more likely to engage in active ageing than OBCs and SCs in Kerala. It is also worth noting that none of the respondents from the ST caste reported engageing in active ageing.

Overall, the findings from Table 6.3 suggest that caste-based differences exist in the level of active ageing among the elderly population of Kerala. However, it is important to note that further research is necessary to identify the specific factors that contribute to this association.

6.1.4 Type of family and active ageing

Table 6.4

Type of Family and Active Ageing

Type of family		Never	Rarely	Some times	Always	Total
Joint	Count	11	9	32	26	78
	% within type family	14.1%	11.5%	41.0%	33.3%	100.0%
Nuclear	Count	140	47	212	243	642
	% within type family	21.8%	7.3%	33.0%	37.9%	100.0%
Total	Count	151	56	244	269	720
	% within type family	21.0%	7.8%	33.9%	37.4%	100.0%
Chi square test value		5.65 (0.145)				

Source: Primary data

Table 6.4 presents the cross-tabulation of the type of family and active ageing among elderly individuals in Kerala. It can be seen that out of the 720 respondents, 78 respondents (11%) belonged to joint family and the remaining 642 (89%) belonged to the nuclear family.

Among these joint families, 26 (33.3%) engaged always in active ageing and 11 (14.1%) engaged never. In nuclear families, 243 (37.9%) reported 'always' in active ageing, while 140 (21.8%) reported 'never'. The Chi-square test value of 5.65 with a p-value of 0.145 indicates that there is no significant association between the type of family and active ageing among the elderly individuals in Kerala.

6.1.5 Family status and Active ageing

Table 6.5

Family Status and Active Ageing

Family status		Never	Rarely	Some times	Always	Total
APL	Count	96	45	181	220	542
	% within card	17.7%	8.3%	33.4%	40.6%	100.0%
BPL	Count	55	11	63	49	178
	% within card	30.9%	6.2%	35.4%	27.5%	100.0%
Total	Count	151	56	244	269	720
	% within card	21.0%	7.8%	33.9%	37.4%	100.0%
Chi square test value		19.56 (0.000)				

Source: Primary data

Table 6.5 shows the cross-tabulation between family status and active ageing, with counts and percentages within each group. The table indicates that among those with APL (Above Poverty Line) status, 40.6% engaged always in active ageing, whereas 17.7% reported never in active ageing. In contrast, among those with BPL (Below Poverty Line) status, only 27.5% reported always in active ageing, whereas 30.9% reported never in active ageing. The chi-square test value of 19.56 indicates that there is a significant association between family status and active ageing ($p < 0.001$), suggesting that family status may be a factor influencing active ageing behavior.

6.2 Gender-Wise differences in the Dimensions of Active Ageing

The main aim of this research work is to investigate the gender differences in various dimensions of active ageing in Kerala. These dimensions of active ageing include behavioral factors, personal factors, social and environmental factors, health and social services, physical environmental factors, economic factors, and social security.

By examining these different dimensions, it is hoped to gain a deeper understanding of how men and women experience ageing differently in Kerala and identify any areas where gender inequalities exist. Ultimately, this research could help inform policies and interventions aimed at promoting more equitable ageing experiences for all individuals, regardless of gender.

6.2.1 Behavioural factors and Gender

The tables show the cross-tabulations between gender and various behavioural factors related to active ageing. The chi-square values are also given along with their corresponding p-values.

Table 6.6

Gender-wise Distribution of Health Status

Gender		Very poor	Poor	Reasonable	Good	Very good	Total
Female	Count	2	29	81	147	60	319
	% within gender	.6%	9.1%	25.4%	46.1%	18.8%	100.0%
Male	Count	6	12	74	191	118	401
	% within gender	1.5%	3.0%	18.5%	47.6%	29.4%	100.0%
Total	Count	8	41	155	338	178	720
	% within gender	1.1%	5.7%	21.5%	46.9%	24.7%	100.0%
Chi square test value		28.86 (0.000)					

Source: Primary data

Table 6.6 shows the distribution of health status by gender. The table shows that there are more males (118 and 191) than females (60 and 147) belonging in the good and very good health categories, while more females (29) than males (12) are in the poor health category. The chi-square value of 28.86 with a p-value of 0.000 indicates that there is a statistically significant relationship between gender and health status.

Table 6.7

Gender wise Distribution of Sleep Deprivation

Gender		Very serious	Serious	Less serious	Moderately serious	Not at all serious	Total
Female	Count	69	34	51	68	97	319
	% within gender	21.6%	10.7%	16.0%	21.3%	30.4%	100.0%
Male	Count	71	30	61	72	167	401
	% within gender	17.7%	7.5%	15.2%	18.0%	41.6%	100.0%
Total	Count	140	64	112	140	264	720
	% within gender	19.4%	8.9%	15.6%	19.4%	36.7%	100.0%
Chi square test value		10.56 (0.045)					

Source: Primary data

Table 6.7 shows the distribution of sleep deprivation by gender. The table shows that there are no major differences between males and females in terms of sleep deprivation severity. However, under 'Not at all serious category, out of a total of 264 respondents, 167 respondents belonged to male category and 97 respondents belonged to female category. The chi-square value of 10.56 with a p-value of 0.045 suggests a weak association between gender and sleep deprivation.

Table 6.8

Gender-wise Distribution of Activities of Daily Life (ADL)

Gender		Very Poor	Poor	Reasonable	Good	Very good	Total
Female	Count	3	10	49	97	160	319
	% within gender	.9%	3.1%	15.4%	30.4%	50.2%	100.0%
Male	Count	2	11	23	94	271	401
	% within gender	.5%	3.44 %	5.7%	23.4%	67.6%	100.0%
Total	Count	5	21	72	191	431	720
	% within gender	.7%	2.9%	10.0%	26.5%	59.9%	100.0%
Chi square test value		30.03 (0.000)					

Source: Primary data

Table 6.8 shows the distribution of activities of daily living (ADL) by gender. The table shows that more males (67.6%) than females (50.2%) are in the very good and poor (3.44%) ADL categories, while more females than males are found in the good (30.4%, reasonable (15.4% and very poor (9%) categories. The chi-square value of 30.03 with a p-value of 0.000 indicates that there is a significant association between gender and ADL.

Table: 6.9

Gender wise Distribution of the Feeling of Optimism in Life

Gender		Very Poor	Poor	Reasonable	Good	Very Good	Total
Female	Count	6	32	118	102	61	319
	% within gender	1.9%	10.0%	37.0%	32.0%	19.1%	100.0%
Male	Count	7	29	113	128	124	401
	% within gender	1.7%	7.2%	28.2%	31.9%	30.9%	100.0%
Total	Count	13	61	231	230	185	720
	% within gender	1.8%	8.5%	32.1%	31.9%	25.7%	100.0%
Chi square test value		19.03 (0.003)					

Source: Primary data

Table 6.9 shows that the distribution of feeling of optimism on life by gender. It shows that more males (124 and 128) than females (61 and 102) are in the very good and good categories, while more females than males are in the poor (32) and reasonable (118) categories. The chi-square value of 19.03 with a p-value of 0.003 indicates no significant relationship between gender and feeling of optimism.

Table 6.10

Gender wise Distribution of Pulmonary Functions

Gender		Very serious	Serious	Moderately Serious	Less serious	Not at all serious	Total
Female	Count	46	33	62	59	119	319
	% within gender	14.4%	10.3%	19.4%	18.5%	37.3%	100.0 %
Male	Count	39	41	67	60	194	401
	% within gender	9.7%	10.2%	16.7%	15.0%	48.4%	100.0 %
Total	Count	85	74	129	119	313	720
	% within gender	11.8%	10.3%	17.9%	16.5%	43.5%	100.0 %
Chi square test value		10.45 0.034					

Source: Primary data

Table 6.10 shows the distribution of pulmonary functions by gender. The table shows that the only category where more females (46) than males found are in very serious category, while more males than females are found in serious, (41), moderately serious (67), less serious (60) and not at all serious (194) categories. The chi-square value of 10.45 with a p-value of 0.034 indicates a weak association between gender and pulmonary functions.

Table 6.11

Gender wise Distribution of the Vision of Elderly

Gender		Very Poor	Poor	Reasonable	Good	Very good	Total
Female	Count	2	15	63	179	60	319
	% within gender	.6%	4.7%	19.7%	56.1%	18.8%	100.0%
Male	Count	0	17	38	250	96	401
	% within gender	.0%	5.32%	9.5%	62.3%	23.9%	100.0%
Total	Count	2	32	101	429	156	720
	% within gender	.3%	4.4%	14.0%	59.6%	21.7%	100.0%
Chi square test value		19.89 (0.000)					

Source: Primary data

Table 6.11 shows the distribution of vision of the elderly by gender. The table shows that more males than females are in the very good (23.9%), good (62.3%) and poor (5.32%) categories, while more females than males are found in reasonable (19.7%) and very poor categories (6%). The chi-square value is 19.89 with p value of 0.000 is also statistically significant.

Table 6.12

Gender wise Distribution of the Audibility of Elderly

Gender		Very poor	Poor	Reasonable	Strong	Very strong	Total
Female	Count	10	28	45	100	136	319
	% within gender	3.1%	8.8%	14.1%	31.3%	42.6%	100%
Male	Count	2	16	41	128	214	401
	% within gender	.5%	4.0%	10.2%	31.9%	53.4%	100%
Total	Count	12	44	86	228	350	720
	% within gender	1.7%	6.1%	11.9%	31.7%	48.6%	100%
Chi square test value		20.66 (0.000)					

Source: Primary data

Table 6.12 shows the gender-wise distribution of the audibility among the elderly. The table presents the counts and percentages of different levels of audibility (very poor, poor, reasonable, strong, and very strong) for female and male respondents. While males are shown to outnumber females in terms of strong (128) and very strong (214) audibility, female respondents fall under reasonable (45), poor (28) and very poor (10) categories. The chi-square test value is 20.66, with a p-value of 0.000, indicating a statistically significant difference in audibility among respondents.

Table 6.13

Gender wise Distribution of Alcohol consumption

Gender		Always	Sometimes	Occasionally	Rare	Never	Total
Female	Count	4	11	8	0	296	319
	% within gender	1.3%	3.4%	2.5%	.0%	92.8%	100.0%
Male	Count	59	91	48	14	189	401
	% within gender	14.7%	22.7%	12.0%	3.5%	47.1%	100.0%
Total	Count	63	102	56	14	485	720
	% within gender	8.8%	14.2%	7.8%	1.9%	67.4%	100.0%
Chi square test value		169.88 (0.000)					

Source: Primary data

Table 6.13 displays the gender-wise distribution of alcohol consumption among the elderly. The table provides the counts and percentages of different levels of alcohol consumption (always, sometimes, occasionally, rare and never) for female and male respondents. The total count and percentage within gender are also provided. The chi-square test value is 169.88, with a p-value of 0.000, indicating a statistically significant difference in alcohol consumption between genders.

Table 6.14

Gender wise distribution of smoking habits

Gender		Always	Some-times	Occasionally	Rare	Never	Total
Female	Count	2	2	1	2	312	319
	% within gender	.6%	.6%	.3%	.6%	97.8%	100.0%
Male	Count	98	91	40	9	163	401
	% within gender	24.4%	22.7%	10.0%	2.2%	40.6%	100.0%
Total	Count	100	93	41	11	475	720
	% within gender	13.9%	12.9%	5.7%	1.5%	66.0%	100.0%
Chi square test value		259.77 (0.000)					

Source: Primary data

Table 6.14 presents the gender-wise distribution of smoking habits among the elderly. The table shows the counts and percentages of different levels of smoking habits (always, sometimes, occasionally, rare and never) for female and male respondents. The total count and percentage within gender are also provided. The chi-square test value is 259.77, with a p-value of 0.000, indicating a statistically significant difference in smoking habits between genders.

Table 6.15

Gender-wise distribution of Meditation and Yoga among Elderly

Gender		Never	Rare	Occasionally	Sometimes	Always	Total
Female	Count	49	20	50	72	128	319
	% within gender	15.4%	6.3%	15.7%	22.6%	40.1%	100.0%
Male	Count	78	24	44	77	178	401
	% within gender	19.5%	6.0%	11.0%	19.2%	44.4%	100.0%
Total	Count	127	44	94	149	306	720
	% within gender	17.6%	6.1%	13.1%	20.7%	42.5%	100.0%
Chi square test value		123.22 (0.000)					

Source: Primary data

Table 6.15 displays the gender-wise distribution of meditation and yoga among the elderly. The table shows the counts and percentages of different levels of meditation and yoga practice (never, rare, occasionally, sometimes and always,) for female and male respondents. The total count and percentage within gender are also provided. The chi-square test value is 123.22, with a p-value of 0.000, indicating a statistically significant difference in meditation and yoga practice between genders.

6.2.2 Gender and Personal factors

The personal factors of active ageing as per WHO framework were evaluated in terms of psychological distress, happiness, loneliness, cognitive functions of the elderly, and personality status.

Table 6.16

Gender wise Distribution of Psychological Distress

Gender		Very severe	Severe	Less Severe	Moderately severe	Not at all severe	Total
Female	Count	66	64	61	71	57	319
	% within gender	20.7%	20.1%	19.1%	22.3%	17.9%	100.0%
Male	Count	71	73	77	88	92	401
	% within gender	17.7%	18.2%	19.2%	21.9%	22.9%	100.0%
Total	Count	137	137	138	159	149	720
	% within gender	19.0%	19.0%	19.2%	22.1%	20.7%	100.0%
Chi square test value				3.56 (0.45)			

Source: Primary data

Table 6.16 shows the gender-wise distribution of psychological distress. The percentage of females and males reporting severe and very severe psychological distress were similar. The chi-square test result of 3.56 with a p-value of 0.45 suggests that there is no significant gender difference in the psychological distress of the elderly in Kerala.

Table 6.17

Gender wise Distribution of Happiness

Gender		Not at all	Rarely	Some times	Most Often	Always	Total
Female	Count	9	66	96	107	41	319
	% within gender	2.8%	20.7%	30.1%	33.5%	12.9%	100.0%
Male	Count	12	56	115	140	78	401
	% within gender	3.0%	14.0%	28.7%	34.9%	19.5%	100.0%
Total	Count	21	122	211	247	119	720
	% within gender	2.9%	16.9%	29.3%	34.3%	16.5%	100.0%
Chi square value		10.45 (0.034)					

Source: Primary data

Table 6.17 presents the gender-wise distribution of happiness. The percentage of females' happiness in "most often" and "sometimes" was higher compared to males. The chi-square test result of 10.45 with a p-value of 0.034 suggests no significant difference in the happiness of elderly males and females in Kerala.

Table 6.18

Gender wise Distribution of Loneliness

Gender		Always	Most Often	Sometimes	Rarely	Not at all	Total
Female	Count	41	59	74	63	82	319
	% within gender	12.9%	18.5%	23.2%	19.7%	25.7%	100.0%
Male	Count	22	37	86	81	175	401
	% within gender	5.5%	9.2%	21.4%	20.2%	43.6%	100.0%
Total	Count	63	96	160	144	257	720
	% within gender	8.8%	13.3%	22.2%	20.0%	35.7%	100.0%
Chi square value		39.45 (0.000)					

Source: Primary data

Table 6.18 shows the gender-wise distribution of loneliness. The percentage of reporting "not at all" "rarely" and "sometimes" lonely was lower among males. The chi-square test result of 39.45 with a p-value of 0.000 suggests a significant gender difference in the loneliness of the elderly in Kerala. The fact that considerable higher level of loneliness among females compared to their counterparts has to be viewed seriously. This is probably due to the fact that due to lower male life expectancy, there are more widows than widowers and the manifold responsibilities of household chores must have put them in an unsupportive emotional drain.

Table 6.19

Gender wise Distribution of Cognitive Functions of Elderly

Gender		Very Poor	Poor	Moderate	Above Moderate	Excellent	Total
Female	Count	28	89	113	48	41	319
	% within gender	8.8%	27.9%	35.4%	15.0%	12.9%	100.0%
Male	Count	10	75	124	88	104	401
	% within gender	2.5%	18.7%	30.9%	21.9%	25.9%	100.0%
Total	Count	38	164	237	136	145	720
	% within gender	5.3%	22.8%	32.9%	18.9%	20.1%	100.0%
Chi square test value		45.45 (0.000)					

Source: Primary data

Table 6.19 presents the gender-wise distribution of cognitive functions of the elderly. The percentage of males reporting "above moderate" and "excellent" cognitive function was higher than females. The chi-square test result of 45.45 with a p-value of 0.000 suggests a significant gender difference in the cognitive functions of the elderly in Kerala.

Table 6.20

Gender wise Distribution of Personality Status

Gender		Very poor	Poor	Moderate	Above Moderate	Excellent	Total
Female	Count	3	16	144	76	80	319
	% within gender	.9%	5.0%	45.1%	23.8%	25.1%	100.0%
Male	Count	3	21	130	99	148	401
	% within gender	.7%	5.2%	32.4%	24.7%	36.9%	100.0%
Total	Count	6	37	274	175	228	720
	% within gender	.8%	5.1%	38.1%	24.3%	31.7%	100.0%
Chi square test value		16.56 (0.034)					

Source: Primary data

Table 6.20 shows the gender-wise distribution of personality status. There was no significant gender difference in the personality status of the elderly in Kerala, as suggested by the chi-square test result of 16.56 with a p-value of 0.034.

In conclusion, this study found significant gender differences in the happiness, loneliness, and cognitive functions of the elderly in Kerala. However, there were no significant gender differences in the psychological distress and personality status of the elderly. These findings suggest that interventions to promote active ageing in Kerala should take into account gender differences to effectively address the needs of elderly males and females.

6.2.3 Gender and Social environmental factors

The following tables represent results of the gender-wise distribution of various social and environmental factors related to active ageing as per World Health Organization (WHO) framework.

Table 6.21

Gender wise Distribution of Education

Gender		No Education	Primary	Secondary	Higher Secondary	Degree and above	Total
Female	Count	65	107	82	16	49	319
	% within gender	20.4%	33.5%	25.7%	5.0%	15.4%	100.0%
Male	Count	48	123	106	42	82	401
	% within gender	12.0%	30.7%	26.4%	10.5%	20.4%	100.0%
Total	Count	113	230	188	58	131	720
	% within gender	15.7%	31.9%	26.1%	8.1%	18.2%	100.0%
Chi square test value		18,9 (0.000)					

Source: Primary data

Table 6.21 shows the gender-wise distribution of education. The table suggests that more men (20.4%) than women (15.4%) have a degree or higher education, whereas more women (33.5%) than men (30.7%) have only primary education. The chi-square test indicates a significant association between gender and education ($p<0.001$).

Table 6.22

Gender-wise Distribution of Social Support and Network

Gender		Never	Rare	Occasionally	Sometimes	Always	Total
Female	Count	26	27	66	47	153	319
	% within gender	8.2%	8.5%	20.7%	14.7%	48.0%	100.0%
Male	Count	15	19	53	54	260	401
	% within gender	3.7%	4.7%	13.2%	13.5%	64.8%	100.0%
Total	Count	41	46	119	101	413	720
	% within gender	5.7%	6.4%	16.5%	14.0%	57.4%	100.0%
Chi square test value		24.35 (0.000)					

Source: Primary data

Table 6.22 shows the gender-wise distribution of social support and network. The table suggests that more men (64.8%) than women (48.0%) were reported to have always social support, while more women (20.7%) than men (13.2%) were reported to have occasional social support. The chi-square test indicates a significant association between gender and social support ($p<0.001$).

Table 6.23

Classification of Violence and Abuse Across Gender

Gender		Always	Rare	Occasionally	Sometimes	Not at All	Total
Female	Count	17	64	15	70	153	319
	% within gender	5.3%	20.1%	4.7%	21.9%	48.0%	100.0%
Male	Count	6	84	25	47	239	401
	% within gender	1.5%	20.9%	6.2%	11.7%	59.6%	100.0%
Total	Count	23	148	40	117	392	720
	% within gender	3.2%	20.6%	5.6%	16.2%	54.4%	100.0%
Chi square test value		25.66 (0.000)					

Source: Primary data

Table 6.23 shows the gender-wise distribution of violence and abuse. The table suggests that more men (59.6%) than women (48%) reported experiencing considerably Not at all violence and abuse. However under 'always', 'occasionally' and 'sometimes' classification, more female (102) than male (78) experience violence and abuse. The chi-square test indicates a significant association between gender and violence and abuse ($p<0.001$).

In summary, the tables suggest that there are significant gender differences in education, social support and network, and violence and abuse.

6.2.4 Gender, Health and Social Service

The following tables represent results of the gender-wise distribution of various health and social service factors related to active ageing of World Health Organization (WHO) framework.

Table 6.24

Distribution of the Occurrence of Illness Across Gender

Gender		4 or More Illness	3 Illness	2 Illness	One Illness	None	Total
Female	Count	65	86	95	59	14	319
	% within gender	20.4%	27.0%	29.8%	18.5%	4.4%	100.0%
Male	Count	85	104	121	69	22	401
	% within gender	21.2%	25.9%	30.2%	17.2%	5.5%	100.0%
Total	Count	150	190	216	128	36	720
	% within gender	20.8%	26.4%	30.0%	17.8%	5.0%	100.0%
Chi square test value		0.712 (0.975)					

Source: Primary data

Table 6.24 shows the gender-wise distribution of illness. The table suggests that a similar percentage of men and women reported having two or more illnesses, with around 30% reporting two illnesses and around 25-27% reporting three illnesses. The chi-square test indicates no significant association between gender and illness (p=0.975).

Table 6.25

Distribution across gender based on their access to health

Gender		Poor	Rare	occasionally	Sometimes	Always	Total
Female	Count	34	38	73	53	121	319
	% within gender	10.7%	11.9%	22.9%	16.6%	37.9%	100.0%
Male	Count	40	27	94	64	176	401
	% within gender	10.0%	6.7%	23.4%	16.0%	43.9%	100.0%
Total	Count	74	65	167	117	297	720
	% within gender	10.3%	9.0%	23.2%	16.2%	41.2%	100.0%
Chi square test value		6.75 (0.123)					

Source: Primary data

Table 6.25 shows the gender-wise distribution of access to health. The table suggests that a similar percentage of men and women reported always having access to health, with around 40% reporting always access. The chi-square test indicates no significant association between gender and access to health (p=0.123).

Table 6.26

Distribution of Respondents across Gender based on Physical and Mental Health Care

Gender		Very Bad	Bad	Reasonable	Good	Very good	Total
Female	Count	4	60	145	74	36	319
	% within gender	1.3%	18.8%	45.5%	23.2%	11.3%	100.0%
Male	Count	3	62	170	119	47	401
	% within gender	.7%	15.5%	42.4%	29.7%	11.7%	100.0%
Total	Count	7	122	315	193	83	720
	% within gender	1.0%	16.9%	43.8%	26.8%	11.5%	100.0%
Chi square test value		5.75 (0.223)					

Source: Primary data

Table 6.26 shows the gender-wise distribution of physical and mental health care. The table suggests that more men (29.7%) than women (23.2%) were seen having good physical and mental health care, while more women (45.5%) than men (42.4%) were seen having reasonable physical and mental health care. The chi-square test indicates no significant association between gender and physical and mental health care (p=0.352).

Based on the data presented in tables 24, 25, and 26 in relation to active ageing based on the WHO framework there seems to be no significant difference between men and women in terms of illness and access to health. However, there is a slightly higher percentage of men reporting good physical and mental health care, while a slightly higher percentage of women reporting reasonable physical and mental health care. Nevertheless, the chi-square tests indicate that these differences

are not statistically significant. Overall, these findings suggest that men and women have similar health and social service factors related to active ageing.

6.2.5 Gender and Physical environment factors

The WHO framework on active ageing proposes physical environmental factors also. The tables 6.27 - 6.29 presented below shows the gender-wise distribution of these factors.

Table 6.27

Gender-wise Distribution of the Level of Friendly Environment

Gender		Poor	Rare	Occasionally	Sometimes	Always	Total
Female	Count	34	33	32	74	146	319
	% within gender	10.7%	10.3%	10.0%	23.2%	45.8%	100.0%
Male	Count	17	18	49	72	245	401
	% within gender	4.2%	4.5%	12.2%	18.0%	61.1%	100.0%
Total	Count	51	51	81	146	391	720
	% within gender	7.1%	7.1%	11.2%	20.3%	54.3%	100.0%
Chi square test value		29.87 (0.000)					

Source: Primary data

Table 6.27 shows the gender-wise distribution of the level of a friendly environment. The table suggests that more men (61.1%) than women (45.8%) were found to have 'always' having a friendly environment, while a higher percentage of women replied that they have the environment only 'occasionally' (10%) or 'sometimes' (23.2%). The chi-square test indicates that there is a significant association between gender and the level of a friendly environment (p=0.000).

Table 6.28

Gender wise Distribution of Safety House

Gender		Very Poor	Poor	Moderate	Above Moderate	Excellent	Total
Female	Count	4	55	78	42	140	319
	% within gender	1.3%	17.2%	24.5%	13.2%	43.9%	100.0%
Male	Count	3	52	108	62	176	401
	% within gender	.7%	13.0%	26.9%	15.5%	43.9%	100.0%
Total	Count	7	107	186	104	316	720
	% within gender	1.0%	14.9%	25.8%	14.4%	43.9%	100.0%
Chi square test value		3.45 (.215)					

Source: Primary data

Table 6.28 shows the gender-wise distribution of the safety of the house. The table suggests that there is no significant difference between men and women in terms of safety of the house as the chi-square test indicates (p=0.215).

Table 6.29

Distribution of Absence of Pollution in the Surroundings Across Gender

Gender		**Very Poor**	**Poor**	**Moderate**	**Low**	**No Pollution**	**Total**
Female	Count	156	62	82	18	1	319
	% within gender	48.9%	19.4%	25.7%	5.6%	.3%	100.0%
Male	Count	218	68	93	19	3	401
	% within gender	54.4%	17.0%	23.2%	4.7%	.7%	100.0%
Total	Count	374	130	175	37	4	720
	% within gender	51.9%	18.1%	24.3%	5.1%	.6%	100.0%
Chi square test value		4.356 (0.222)					

Source: Primary data

Table 6.29 shows the gender-wise distribution of the absence of pollution in the surrounding. The table suggests that a higher percentage of men (54.4%) than women (48.9%) reported high pollution in the surrounding, while a higher percentage of women reported moderate or poor pollution in the surrounding. The chi-square test indicates that there is no significant association between gender and absence of pollution in the surrounding (p=0.222).

Overall, the findings suggest that men and women have different perceptions of the physical environmental factors related to active ageing, particularly in terms of the level of a friendly environment and the abuse of pollution in the surrounding. However, there is no significant difference between men and women in terms of the safety of the house.

6.2.6 Gender and Economic factors

Economic well-being plays a crucial role in shaping the quality of life and overall well-being of individuals, particularly in the context of active ageing. Gender differences in economic factors such as economic status, social security, and access to the labor market can significantly influence the financial independence, security, and overall participation of older adults in economic and social activities.

This section explores the gender-wise distribution of various economic factors that contribute to active ageing. The analysis focuses on three key dimensions: (1) economic status, (2) access to social security, and (3) participation in the labor market. Understanding these variations is essential for developing policies that promote gender-inclusive economic opportunities and social protection measures for ageing populations.

The following tables present gender-wise distributions of different economic factors related to active ageing.

Table 6.30

Classification of Economic Status Across Gender

Gender		Very poor	Poor	Middle	Upper middle	High	Total
Female	Count	11	68	123	43	74	319
	% within gender	3.4%	21.3%	38.6%	13.5%	23.2%	100.0%
Male	Count	3	69	132	75	122	401
	% within gender	.7%	17.2%	32.9%	18.7%	30.4%	100.0%
Total	Count	14	137	255	118	196	720
	% within gender	1.9%	19.0%	35.4%	16.4%	27.2%	100.0%
Chi square test value		18.65 (0.00)					

Source: Primary data

Table 6.30 shows the distribution of economic status among males and females. The table shows that the number of males and females in the 'high' and 'middle' economic status groups are relatively similar, but males have a higher percentage in the high economic status group (30.4%) than females (23.2%). Conversely, females have a higher percentage in the poor economic status group (21.3%) compared to males (17.2%). The chi-square test value of 18.65 suggests that there is a statistically significant difference in the distribution of economic status among males and females ($p<0.001$).

Table 6.31

Distribution of social Security Across Gender

Gender		Least secured	Some what secured	Reasonably secured	Secured	Always secured	Total
Female	Count	68	26	50	64	111	319
	% within gender	21.3%	8.2%	15.7%	20.1%	34.8%	100.0%
Male	Count	61	32	66	59	183	401
	% within gender	15.2%	8.0%	16.5%	14.7%	45.6%	100.0%
Total	Count	129	58	116	123	294	720
	% within gender	17.9%	8.1%	16.1%	17.1%	40.8%	100.0%
Chi square test value		13.24 (0.013)					

Source: Primary data

Table 6.31 shows the gender-wise distribution of social security. The table shows that a higher percentage of males (45.6%) are always secured compared to females (34.8%), while a higher percentage of females (20.1%) are secured somewhat compared to males (14.7%). The chi-square test value of 13.24 suggests that there is no statistically significant difference in the distribution of social security among males and females ($p<0.013$).

Table 6.32

Distribution of Respondents on their Access to Labour Market Across Gender

Gender		Not at all	Rarely	Sometimes	Most often	Always	Total
Female	Count	122	42	51	51	53	319
	% within gender	38.2%	13.2%	16.0%	16.0%	16.6%	100.0%
Male	Count	53	20	50	63	215	401
	% within gender	13.2%	5.0%	12.5%	15.7%	53.6%	100.0%
Total	Count	175	62	101	114	268	720
	% within gender	24.3%	8.6%	14.0%	15.8%	37.2%	100.0%
Chi square test value		234.23 (0.000)					

Source: Primary data

Table 6.32 shows the gender-wise distribution of access to the labor market. The table shows that a higher percentage of males (53.6%) always have access to the labor market compared to females (16.6%), while a higher percentage of females (38.2%) do not have access at all compared to males (13.2%). The chi-square test value of 234.23 suggests that there is a statistically significant difference in the distribution of access to the labor market among males and females ($p<0.000$).

Overall, these tables suggest that there are significant gender differences in the economic factors related to active ageing, including economic status, social security, and access to the labor market. These differences may have implications for the well-being and quality of life of older adults and may require targeted policies and interventions to address them.

6.2.7 Gender and Social security

The following tables provide information on the gender-wise distribution of various social security factors related to active ageing, such as source of livelihood, types of pension, awareness of government programmes, and effectiveness of government programmes.

Table 6.33

Distribution of Respondents across Gender based on the Source of Livelihood

Gender		Pension	Depended on Family Income	Daily labour	No Source	Other	Total
Female	Count	139	100	72	2	6	319
	% within gender	43.6%	31.3%	22.6%	.6%	1.9%	100.0%
Male	Count	172	60	155	1	13	401
	% within gender	42.9%	15.0%	38.7%	.2%	3.2%	100.0%
Total	Count	311	160	227	3	19	720
	% within gender	43.2%	22.2%	31.5%	.4%	2.6%	100.0%
Chi square test value		39.76 (0.000)					

Source: Primary data

Table 6.33 shows that a higher percentage of females depend on pension as a source of livelihood compared to males (43.6% vs. 42.9%), while a higher percentage of males depend on daily labor (38.7% vs. 22.6%) or family income (31.3% vs. 15.0%). The Chi-square test result indicates that the differences in the distribution of source of livelihood between genders are statistically significant.

Table 6.34

Classification of Respondents Across Gender based on Old age Pension

Gender		Disability Pension	Old Age Pension	Retd. Govt Employee	Widow Pension	Other	Total
Female	Count	3	92	64	88	72	319
	% within gender	.9%	28.8%	20.1%	27.6%	22.6%	100.0%
Male	Count	13	183	125	4	76	401
	% within gender	3.2%	45.6%	31.2%	1.0%	19.0%	100.0%
Total	Count	16	275	189	92	148	720
	% within gender	2.2%	38.2%	26.2%	12.8%	20.6%	100.0%
Chi square test value		232.21 (0.000)					

Source: Primary data

Table 6.34 indicates that a higher percentage of males receive old age pensions compared to females (45.6% vs. 28.8%), while a higher percentage of females receive widow pensions (27.6% vs. 1.0%). The Chi-square test result indicates that the differences in the distribution of types of pensions between genders are statistically significant.

Table 6.35

Distribution of Respondents Across Gender based on their Awareness of Governmental Programmes to Practise

Gender		No	Yes	Total
Female	Count	184	135	319
	% within gender	57.7%	42.3%	100.0%
Male	Count	142	259	401
	% within gender	35.4%	64.6%	100.0%
Total	Count	326	394	720
	% within gender	45.3%	54.7%	100.0%
Chi square test value		36.44 (0.000)		

Source:Primarydata

Table 6.35 shows that a higher percentage of males are aware of government programmes for practise active ageing compared to females (64.6% vs. 42.3%). The Chi-square test result indicates that the differences in the distribution of awareness of government programmes between genders are statistically significant.

Table 6.36

Gender and Effectiveness of Policy Interventions

Gender		Not at all effective	Moderately effective	Somewhat effective	Always effective	Total
Female	Count	113	100	66	40	319
	% within gender	35.4%	31.3%	20.7%	12.5%	100.0%
Male	Count	100	96	107	98	401
	% within gender	24.9%	23.9%	26.7%	24.4%	100.0%
Total	Count	213	196	173	138	720
	% within gender	29.6%	27.2%	24.0%	19.2%	100.0%
Chi square test value		26.45 (0.000)				

Source: Primary data

Table 6.36 indicates that both males and females evaluate government policy interventions for making ageing active as only moderately effective or not effective at all. However, a higher percentage of males evaluate these interventions as always effective (24.4% vs. 12.5%). The Chi-square test result indicates that the differences in the distribution of rating of policy interventions between genders are statistically significant.

Overall, the tables suggest that there are significant gender differences in the distribution of various social security factors related to active ageing, such as source of livelihood, types of pensions, awareness of government programmes, and effectiveness of government programmes. These differences may have implications for policy interventions aimed at promoting active ageing.

6.3 Conclusion

In conclusion, this chapter has explored the gender-specific variations in the dimensions of active ageing in Kerala, India. Through a quantitative research approach, we have examined how the active ageing status of the elderly differs across various socio-demographic groups in Kerala and how various dimensions of active ageing of WHO vary by gender in Kerala. The findings of the study reveal that the active ageing status of the elderly in Kerala is significantly influenced by socio-demographic factors. The study also highlights the gender-specific differences in the dimensions of active ageing, with women showing lower levels of participation and security.

The study has significant implications for policy and practice in promoting active ageing in Kerala. Our findings suggest the need for gender-sensitive approaches to promote active ageing and address the gender-specific challenges faced by older women. Policymakers and practitioners should recognize the importance of addressing the socio-economic determinants of active ageing, such as income and education, and prioritize interventions that promote social participation, health, and security for older adults. Finally, the study highlights the need for further research on gender-specific dimensions of active ageing, particularly in other regions of India, to better understand the diverse challenges faced by older adults in the country.

CHAPTER VII

DETERMINANTS OF ACTIVE AGEING IN KERALA: A GENDER AND RELIGIOUS -BASED ANALYSIS

7.1 Introduction

The process of active ageing is a crucial aspect of public health, especially in an ageing population. The World Health Organization (WHO) has developed a framework that identifies various dimensions or factors that contribute to active ageing. This research aims to identify the impact of these dimensions on active ageing in Kerala. The dependent variable in this study is active ageing, which is a self-assessed reported status of active ageing. The study considers seven composite indexes of various dimensions of active ageing as independent variables. These dimensions include behavioural factors, personal well-being, social environment, health and social services, physical environment, economic status, and social security. The behavioural index includes questions related to health, sleeping patterns, optimism, activities of daily living, pulmonary and vision-related issues, as well as drinking alcohol and smoking habits. The personal index is a composite index of psychological distress, happiness, loneliness, and cognitive functions. The social environment index is a composite index of social support and network, education, and violence and abuse. The health and social service index is a composite index of the reaction to illness and access to health services, among others. The physical and environment index includes friendly environments, safe housing, and the absence of pollution in the surroundings. The economic index is a composite index of the level of economic status, social security, and access to labour markets. Finally, the social security index is a composite index of sources of livelihood, pensions, awareness of government programs, and their effectiveness. By identifying the impact of these various dimensions of active ageing, this research will provide valuable insights into promoting healthy ageing in Kerala.

This study employs OLS estimation to determine the impact of the various dimensions of active ageing as per WHO framework on the present self-assessed status of active ageing in Kerala. Additionally, the Ordered Probit model is used to test the robustness of the OLS results. The study has estimated regression equations for the total sample as well as disaggregated by gender and religion to investigate how the effects of various dimensions of active ageing vary by gender and religion in Kerala. This disaggregation is crucial to provide policymakers with insights into the unique needs and challenges faced by different demographic groups. By examining the impact of these variations up on active ageing dimensions, policymakers can modify their policies and interventions to meet the specific needs of different groups in Kerala. This approach can be particularly useful in improving the overall effectiveness and inclusivity of policies aimed at promoting active ageing. The analysis of the research conducted in this study can be explained in the following key heads:

7.2 Descriptive statistics of the variables used

The table 7.1 below provides descriptive statistics for the dependent and independent variables used in the study.

7.2.1 ***Self-reported active ageing:*** This variable is the dependent variable in the study, which measures the present self-reported status of active ageing. It has a range of values from 0 to 4, with a mean of 1.215 and a standard deviation of 1.568.

7.2.2 ***Behavioural index:*** This variable is an independent variable that measures various behavioural factors related to active ageing, such as health, sleeping habits, optimism, activities of daily living, pulmonary function, vision, drinking alcohol, and smoking. It has a range of values from 1 to 5, with a mean of 3.885 and a standard deviation of 0.882.

7.2.3 ***Personal index:*** This variable is an independent variable that measures personal well-being factors related to active ageing, such as psychological distress, happiness, loneliness, and cognitive function. It has a range of values from 1 to 5, with a mean of 2.394 and a standard deviation of 1.322.

7.2.4 ***Social Environment index:*** This variable is an independent variable that measures social support and network factors related to active ageing, such as education, violence, and abuse. It has a range of values from 1 to 5, with a mean of 2.811 and a standard deviation of 1.312.

7.2.5 ***Health & social services index:*** This variable is an independent variable that measures the quality of health and social services access related to active ageing, such as reaction to illness and health service access. It has a range of values from 1 to 5, with a mean of 3.310 and a standard deviation of 0.918.

7.2.6 ***Physical Environment Index:*** This variable is an independent variable that measures the physical environment factors related to active ageing, such as friendly environment, safe housing, and pollution. It has a range of values from 1 to 5, with a mean of 3.854 and a standard deviation of 1.166.

7.2.7 ***Economic Index:*** This variable is an independent variable that measures economic factors related to active ageing, such as economic status, social security level, and access to labor market. It has a range of values from 1 to 5, with a mean of 3.479 and a standard deviation of 1.137.

7.2.8 ***Social Security Index:*** There were 720 observations in the sample, with a mean of 2.327778 and a standard deviation of 1.094076. The minimum value was 1 and the maximum value was 4. This suggests that the social environment in Kerala may be relatively moderate, with a range of scores from 1 to 4. However, without more information about the scoring system and distribution of scores, it's difficult to make any further interpretation of the results.

Sex (female): The values of male and female in this context refer to the proportion of the sample that are males and females, respectively. In this case, the proportion of the sample that is male is 0.55, which means that approximately 55% of the sample are males, while the proportion of the sample that is female is 0.45, which means that approximately 45% of the sample are females.

Religion (Hindu): This variable is a dummy variable that indicates religion, with 1 representing Hindu and 0 representing non-Hindu. The mean is 0.694, indicating that the majority of the sample is Hindu.

Table 7.1

Descriptive Statistics of the Dependent and Independent Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Self-reported active ageing	720	1.215278	1.567947	0	4
Behavioural index	720	3.884722	.8820825	1	5
Personal index	720	2.394444	1.321681	1	5
Social Environment index	720	2.811111	1.312352	1	5
Health & social services index	720	3.309722	.9180101	1	5
Physical Environment Index	720	3.854167	1.166099	1	5
Economic Index	720	3.479167	1.137114	1	5
Health and Social Services Index	720	2.327778	1.094076	1	4
Social Security Index	720				
Sex (female)	720	1.443056	.4970921	1	2
Religion (Hindu)	720	.6944444	.4609626	0	1

Source: Estimated from primary data

7.3 Determinants of active ageing in Kerala by Gender: Results from OLS and O-Probit Models

The table 7.2 and table 7.3 represent the results of a multiple linear regression or OLS model used to determine the determinants of active ageing in Kerala, India. The OLS estimated results are presented in table 7.2 for total samples, males and females, while table 7.3 presents the ordered probit regression results for gender-wise analysis. The dependent variable is the active ageing of elderly people, and the independent variables are composite indices related to behavioural, personal,

social environment, health and social services, physical environment, economic, and social security factors.

The OLS regression coefficients show that the social environment index has a negative relationship with active ageing, while the health and social services index, physical environment index, and personal index have a positive relationship with active ageing. The behavioural index and economic index have a negative relationship with active ageing in the total sample and female samples, while the health and social services index have a positive relationship with active ageing in the male sample.

The probit regression coefficients show that the behavioural index, economic index, and social environment index have a negative relationship with active ageing, while the health and social services index, physical environment index, personal index have a positive relationship with active ageing. The gender-wise analysis shows that the coefficients of the independent variables are largely consistent across genders.

7.3.1 ***Behavioural index:*** This is a composite index of various behavioural factors that may affect active ageing among the elderly. The negative coefficient in the OLS model and the ordered probit model suggests that higher scores on this index are associated with lower levels of active ageing. The results show that the behavioural index has a negative effect on active ageing for the total sample and female sample, but not for the male sample.

7.3.2 ***Personal index:*** This index reflects the personal attributes of the elderly, such as their level of education, income, and health status. The positive coefficient in both the OLS and ordered probit models for all samples indicates that higher scores on this index are associated with higher levels of active ageing.

7.3.3 ***Social Environment index:*** This index reflects the social environment in which the elderly live, including the quality of social relationships and community support. The negative coefficient in both the OLS and ordered probit models for all

samples suggests that higher scores on this index are associated with lower levels of active ageing.

7.3.4 ***Health & social services index:*** This index reflects the availability and quality of health and social services for the elderly. The positive coefficient in both the OLS and ordered probit models suggests that higher scores on this index are associated with higher levels of active ageing. The health and social services index has a positive effect on active ageing for the total sample and male sample, but not for the female sample.

7.3.5 ***Physical Environment Index:*** This index reflects the physical environment in which the elderly live, such as the quality of housing and infrastructure. The positive coefficient in the OLS model and the ordered probit model indicates that higher scores on this index are associated with higher levels of active ageing. The physical environment index has a positive effect on active ageing for the total sample, but not for the male and female samples.

7.3.6 ***Economic Index:*** This index reflects the economic resources available to the elderly, such as income and assets. The negative coefficient in both the OLS and ordered probit models suggests that higher scores on this index are associated with lower levels of active ageing.

7.3.7 ***Social Security Index***: This index reflects the quality and availability of social security programs for the elderly. The positive coefficient in the ordered probit model indicates that higher scores on this index are associated with higher levels of active ageing.

The R-squared value is higher for the female sample in the OLS regression, indicating that the independent variables explain a greater proportion of the variation in the dependent variable in the female sample compared to the male sample and total sample. The F-statistic indicates that the regression models are statistically significant at the 1% level. The ordered probit regression models are also significant at the 1% level based on the LR chi square value.

The gender differences found in the study have important policy implications for active ageing in Kerala. Specifically, the study shows that women have lower levels of active ageing compared to men, and that the determinants of active ageing differ for men and women.

To address this gender gap in active ageing, policies should aim to:

a) ***Address gender inequalities in access to health and social services*****:** The study finds that health and social services are important determinants of active ageing for women. Policies should prioritize providing women with equal access to these services to improve their health outcomes and overall wellbeing.

b) ***Address gender inequalities in economic opportunities:*** The study finds that economic opportunities are important for active ageing for both men and women. However, women face significant challenges in accessing economic opportunities due to gender discrimination and cultural norms. Policies should aim to address these challenges and provide women with equal access to economic opportunities.

c) ***Address gender-based violence:*** The study finds that experiences of violence and abuse are important barriers to active ageing for women. Policies should prioritize preventing and addressing gender-based violence to create a safer and more supportive environment for women to age actively.

d) ***Promote gender-sensitive approaches to active ageing*****:** Policies should adopt a gender-sensitive approach to active ageing that recognizes the unique challenges faced by men and women and provides tailored support and services to address these challenges. This approach should also recognize the importance of addressing social norms and cultural practices that perpetuate gender inequalities and hinder active ageing for women.

Table 7.2

OLS Estimated results of Determinants of Active Ageing in Kerala: Gender wise Analysis

Dependent Variable	**Total Sample**		**Male Sample**		**Female Sample**	
	Coefficient	SE	Coefficient	SE	Coefficient	SE
Behavioural index	-0.117***	0.065	-0.120	0.093	-0.110	0.090
Personal index	0.075**	0.043	0.079	0.065	0.082	0.058
Social Environment index	-0.229***	0.057	-0.256***	0.083	-0.203***	0.071
Health & social services index	0.468***	0.072	0.578***	0.104	0.000	0.000
Physical Environment Index	0.340***	0.074	0.212	0.119	0.000	0.000
Economic Index	-0.443***	0.086	-0.273**	0.132	-0.582***	0.098
Social security Index	0.448***	0.057	0.399***	0.082	0.000	0.000
Constant	-0.227	0.359	-0.477	0.505	0.000	0.000
Sample size	720		401		319	
R-squared	0.202		0.171		0.264	
Root MSE	1.408		1.487		1.305	
F-statistic (df = 7, 712)	25.71		11.58		15.94	
Prob > F	0.0000		0.0000		0.0000	

Notes:

- ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.
- "active ageing" is the dependent variable.

Source: Estimated from primary data

Table 7.3

Ordered Probit Regression Estimation of for Determinants of active Ageing in Kerala- Gender wise Analysis

Dependent Variable	Total sample		Male sample		Female sample	
	Coefficient	Standard Error	Coefficient (Male)	Standard Error (Male)	Coefficient (Female)	Standard Error (Female)
Behavioural index	-0.13251**	0.0539752	-0.1506*	0.0739	-0.1107	0.0805
Personal index	0.0921**	0.036543	0.0999	0.0526	0.0928	0.0530
Social Environment index	-0.1918***	0.0470699	-0.2005**	0.0665	-0.1919**	0.0684
Health & social services index	0.42134***	0.0628231	0.4900***	0.0859	0.3481***	0.0930
Physical Environment Index	0.24047***	0.0617308	0.1409	0.0946	0.3402***	0.0852
Economic Index	-0.3482***	0.0729868	-0.2225*	0.1096	-0.468***	0.1005
Social security Index	0.36351***	0.0492157	0.3442***	0.0694	0.3704***	0.0725
/cut1	1.276093	0.3051429	1.4876	0.4100	1.0594	0.4625
/cut2	1.52517	0.305728	1.6841	0.4108	1.3798	0.4634
/cut3	1.982982	0.3087496	2.0533	0.4142	1.9723	0.4691
/cut4	2.188374	0.3107863	2.2507	0.4169	2.1964	0.4726
LR chi2(7)	89.45***		89.655***		68.55***	

Note: Notes:

- ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.
- "active ageing" is the dependent variable.

Source: Estimated from primary data

7.4 Determinants of active ageing in Kerala by religion: Results from OLS and O-probit models

Based on the OLS and ordered Probit regression results in tables 7.4 and 7.5, the following can be inferred about the effect of each independent variable on active ageing and the comparison of the effects between Muslim, Christian and Hindu groups.

7.4.1 ***Behavioural index:*** A higher score on the behavioural index is associated with lower active ageing in both Muslim/Christian and Hindu groups in both OLS and ordered probit models, but the effect is stronger for the Muslim/Christian group in both models.

7.4.2 ***Personal index:*** The personal index has a positive effect on active ageing for both Muslim/Christian and Hindu groups, but the effect is stronger for the Hindu group in OLS model.

7.4.3 ***Social environment index:*** A higher score on the social environment index is associated with lower active ageing for the Muslim/Christian group in both OLS and ordered probit models, but it has a positive effect on active ageing for the Hindu group in both models.

7.4.4 ***Health and social services index:*** A higher score on the health and social services index has a positive effect on active ageing for both Muslim/Christian and Hindu groups in both OLS and ordered probit models, but the effect is stronger for the Muslim/Christian group in both models.

7. 4.5 ***Physical environment index:*** The physical environment index has a negative effect on active ageing for the Muslim/Christian group in the OLS model, but it has a positive effect for the Hindu group in both OLS and ordered probit models.

7. 4.6 ***Economic index:*** A higher score on the economic index is associated with lower active ageing for both Muslim/Christian and Hindu groups in both OLS and ordered probit models, but the effect is stronger for the Hindu group in both models.

: A higher score on the social security index has a positive effect on active ageing for both Muslim/Christian and Hindu groups in both OLS and ordered probit models, but the effect is stronger for the Muslim/Christian group in both models.

Given that a higher score on the behavioural index is associated with lower active ageing, policymakers should focus on interventions that promote positive behaviours and discourage negative behaviours among older adults. The positive effect of the personal index on active ageing suggests that policymakers should prioritize interventions that enhance personal skills and abilities among older adults, such as lifelong learning programs. The negative effect of the social environment index on active ageing among the Muslim/Christian group highlights the need for policymakers to address social isolation and promote social engagement among older adults in these communities. The positive effect of the health and social services index on active ageing underscores the importance of investing in health and social care services for older adults. The mixed effects of the physical environment index on active ageing across different religious groups call for targeted interventions that address the specific needs and challenges faced by older adults in different environments. The negative effect of the economic index on active ageing suggests that policymakers should address poverty and financial insecurity among older adults, especially in the Hindu community where the effect is stronger. The positive effect of the social security index on active ageing highlights the importance of social protection programs for older adults, especially for the Muslim/Christian group where the effect is stronger.

Table 7.4

OLS Estimated results of Determinants of Active Ageing in Kerala-Religious wise Analysis

Dependent Variable	**Model 1**		**Model 2**	
	Muslim and Christian		**Hindu**	
	Coef.	Std. Err.	Coef.	Std. Err.
Behavioural index	-0.242***	0.120	-0.057	0.076
Personal index	0.037	0.081	0.056	0.051
Social Environment index	0.061	0.098	-0.292***	0.070
Health & social services index	0.410***	0.130	0.416***	0.086
Physical Environment Index	-0.064	0.133	0.474***	0.089
Economic Index	-0.381**	0.147	-0.470***	0.104
Social security Index	0.483***	0.093	0.446***	0.070
R-squared	0.213		0.215	
Adj R-squared	0.187		0.204	
F-test	8.17***		19.30***	
Sample size	220		500	

Note: Notes:

- ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.
- "active ageing" is the dependent variable.

Source: Estimated from primary data

Table 7.5

Ordered Probit Estimated Results of Determinants of Active Ageing in Kerala-Religious wise Analysis

Variable	Model 1		Model 2	
Dependent Variable	Muslim and Christian		Hindu	
	Coef.	Std. Err.	Coef.	Std. Err.
Behavioural index	-0.2687**	0.1223	-0.0761	0.0614
Personal index	0.0744	0.0846	0.0683	0.0420
Social Environment index	0.0751	0.0981	-0.2333***	0.0563
Health & social services index	0.5301***	0.1499	0.3531***	0.0713
Physical Environment Index	-0.0825	0.1292	0.3421***	0.0727
Economic Index	-0.506***	0.1599	-0.3471***	0.0854
Social Security Index	0.5414***	0.1069	0.3342***	0.0579
/cut1	0.8204	0.6840	1.2717	0.3479
/cut2	0.9206	0.6841	1.5836	0.3488
/cut3	1.5006	0.6883	2.0230	0.3525
/cut4	1.5519	0.6892	2.2849	0.3556

Note: Notes:

- ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.
- "active ageing" is the dependent variable.

Source: Estimated from primary data

7. 5 Conclusion

The third objective of the study aimed to investigate the determinants of active ageing in the state of Kerala, India, with a specific focus on religious differences and gender. The findings of the study showed that different religious groups have distinct determinants of active ageing. Health and social services, social security, and economic conditions were found to be significant determinants of active ageing among both Muslim/Christian and Hindu groups. However, the effects

of these determinants differed between the two groups. For instance, the social environment had a negative impact on active ageing for Hindus but not for Muslims/Christians. The study also found significant gender differences in the determinants of active ageing, with women being more vulnerable to the effects of poor health and social services, social environment, and economic conditions.

The policy implications of this study suggest that interventions aimed at promoting active ageing in Kerala should be tailored to the specific needs of different religious groups and gender. Policies focused on improving health and social services, social security, and economic conditions may be particularly effective for promoting active ageing among both Muslim/Christian and Hindu groups. Additionally, policies aimed at improving the social environment may be particularly important for promoting active ageing among Hindus. Policies should also address gender differences in the determinants of active ageing, with a particular focus on improving the health and social services, social environment, and economic conditions for women.

Overall, this study provides valuable insights into the determinants of active ageing in Kerala. The findings highlight the importance of taking into account religious and gender differences when designing policies and interventions aimed at promoting active ageing. Further research is needed to investigate the mechanisms underlying these differences and to identify more specific policy recommendations.

CHAPTER VIII

SUMMARY OF FINDINGS, CONCLUSION AND POLICY PRESCRIPTIONS

8.1 Introduction

In the previous chapter, the researcher, with the help of statistical techniques, comprehensively analysed the data amenable to the objectives and hypothesis of the study. The results obtained from the analysis resulted in deducing this broad study. This chapter summarizes the major conclusion and suggestions for promoting active ageing among the aged. World Health Organization (WHO) holds that active ageing is the "process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age". So, it is about people becoming vigorously active, and proceeding their participation in social, economic, cultural, spiritual and civic affairs in older age..." The present study investigates WHO framework of active ageing in Kerala context and ascertaining major determinants of active ageing.

The extensive review of literature showed that even though studies were held on ageing and its implications in Kerala context, there are no systematic studies on the concept of active ageing and its implications in Kerala context. The extant study genuinely attempts to fill such a gap. The worthwhile objectives of the study centered around the following

1. To assess the Socio-economic characteristics of elderly individuals in Kerala.
2. To analyse the gender-specific differences in WHO active ageing dimensions within Kerala.
3. To investigate the impact of seven composite indices derived from the WHO active ageing framework on self-reported active ageing status in Kerala and explore how these effects vary by gender and religion.

4. To propose policy recommendations for enhancing active ageing practices among the elderly in Kerala

Accordingly, the major hypothesis of the study includes

1. H0: Socio-economic factors do not significantly influence the active ageing status of elderly individuals in Kerala, irrespective of their gender.

   H1: Socio-economic factors significantly influence the active ageing status of elderly individuals in Kerala, irrespective of their gender.

2. H0: The seven composite indexes of various dimensions of the WHO framework for active ageing will not have a positive impact on self-reported active ageing status in Kerala

   H1: The seven composite indexes of various dimensions of the WHO framework for active ageing will have a positive impact on self-reported active ageing status in Kerala

3. H0: The impact of the seven composite indexes on self-reported active ageing status will not vary by gender.

   H1: The impact of the seven composite indexes on self-reported active ageing status will vary by gender.

4. H0: The impact of the seven composite indexes on self-reported active ageing status will not vary by religion.

   H1: The impact of the seven composite indexes on self-reported active ageing status will vary by religion.

Data and methodology explained that the study is based on randomly selected 720 cross section units by collecting the data from Ernakulam district of Kerala by using the fusion of random sampling and systematic sampling method. Ernakulam district is selected for the study as it has recorded largest number of elderly groups of 60 and above in the state (Economic Review 2023). In the first stage, out of seven taluks of Ernakulam, Paravoor taluk was randomly selected. In

the second stage, out of 13 villages in the taluk, Puthanvelikkara village was selected. In the final stage, out of 18 wards of the given village, ward number 11 was selected. This particular ward has 1458 adult voters as per the official website of Election Commission of Kerala. For this population, as per sample size formula, a sample of 733 is required to have a confidence interval of 95%. To identify sample from the voters' list, systematic random sampling method was used based on a sample interval of 2 which is calculated by dividing the total population of 1458 with the sample size of 733. Even though, as per sample methodology, total sample size is 733, 13 respondents were not found fit due to missing value, skewed data, lack of co-operation etc and hence sample size is finalized as 720.

8. 2 Major findings of the study

The major findings derived out of the study by empirically analyzing the aforesaid objectives are as follows.

8.2.1 Socio-economic and Economic characteristics

The study found that out of the total respondents, 44.3% were female and 55.7% were male. Most of the participants were from the general category (46.2%), followed by OBC (43.3%), SC (10.0%), ST (0.3%), and others (0.1%). The family structure of the elderly population was mostly nuclear (89.2%), with only 10.8% from joint families. Many of the participants were not working (51.7%), while 47.2% were employed. The average age of the participants was 69.83, and the average family size was 4.58 members. While the minimum income value in the sample was 500, the maximum was 1,20,000. out of 720 respondents, 269 (37.4%) reported 'always' engaging in active ageing, while 151 (21.0%) reported 'never' engaging in active ageing. 56 (7.8%) reported engaging in active ageing 'rarely', and 244 (33.9%) reported engaging in active ageing 'sometimes.' As much as 46.9% of the respondents reported their health status as good, 24.7% reported very good, while only 5.7% reported poor. Most of the participants i.e. 59.9%, reported their Activities of Daily Life status as very good, while only 2.9% reported it as poor. As much as 59.6% of respondents reported their visionary status as good, while only

4.4% reported poor. Out of 720 respondents, 48.6% reported very strong audibility followed by strong (32%) and reasonable (12%) audibility conditions. It is learnt that 44% of the respondents do not have any pulmonary issues followed 17.9% having moderately serious conditions, 10.3% having serious conditions, and 11.8% very serious conditions. It is also deciphered that 67.4% of the elderly never consumed alcohol, while only 8.8% of them consumed alcohol regularly. Similarly, it can be observed that 66% of the elderly never smoked, while only 13.9% of them smoked regularly. It is also seen that 42.5% of the elderly always practice meditation and yoga, while 17.6% of them never practiced it. The extent of happiness among the elderly shows that 16.5% of the respondents reported being happy always, 34.3% reported being happy most often, while 29.3% reported being happy sometimes. On the other hand, 16.9% of the respondents reported being happy rarely. Similarly, 35.7% of the respondents reported not feeling lonely at all, while 22.2% reported feeling lonely sometimes. 13.3% reported feeling lonely most often. The personality status of the elderly respondents conveys that with 24.3% having above moderate status, 31.7% being excellent, 38.1% having moderate status, 5.1% having poor status, and 0.8% having very poor status. education, and 26.1% having secondary education. Among the 720 elderly people surveyed, 31.9% had completed primary education, while 26.1% had completed secondary education. 18.2% had a degree or higher, 8.1% had completed higher secondary education, and 15.7% had received no formal education. Regarding social support, it is deciphered that 57.4% of the respondents reported that they always received social support, while only 5.7% reported that they never received any support. It may be noted that 54.4% reported poor levels of violence and abuse, while 20.6% reported rare occurrences of such incidents. 16.2% reported sometimes experiencing violence and abuse, while only 5.6% reported occasional incidents. Among the 720 elderly people surveyed, the majority (77.2%) reported having two or more illnesses. Specifically, 30% reported having two illnesses, 26.4% reported having three illnesses, and 20.8% reported having four or more illnesses. Only 5% reported having no illnesses. Similarly, 41.2% of the respondents reported always having access to health services, while 23.2% reported occasional access. Only 10.3% reported poor access

to health services. . It is also seen that 43.8% of the respondents reported having reasonable health status, while 26.8% reported good health status. Only 1% reported very bad health status. The majority of elderly respondents (54.3%) reported always having a friendly environment. A significant proportion (20.3%) reported having a friendly environment only sometimes, while 11.2% reported having a friendly environment occasionally. 43.9% of the respondents reported having excellent safe housing, while 25.8% reported moderate safe housing. A smaller proportion (14.4%) reported having 'above moderate' safe housing, while 14.9% reported poor safe housing. The level of absence of pollution in the surrounding for the elderly is also diagnosed. A significant portion of the respondents (51.9%) experiencing very poor pollution, indicating a concerning level of environmental degradation in their living areas. Additionally, 18.1% categorized their surroundings as having poor *pollution*, further emphasizing the prevalence of polluted environments. On the other hand, 24.3% of respondents indicated experiencing a *moderate level of pollution*, while a much smaller proportion, 5.1%, reported *low pollution*. Only 0.6% of the respondents living in areas with *no pollution*. The economic status of the aged shows that majority of the elderly population falls under the middle category (35.4%), followed by high (27.2%), poor (19.0%), upper middle (16.4%), and very poor (1.9%). The majority of the elderly population is always secured (40.8%), followed by least secured (17.9%), reasonably secured (16.1%). Regarding the source of livelihood of the elderly population, where the majority of the elderly population depends on pension schemes (43.2%) and daily labour (31.5%) for their livelihood. majority of the elderly population (79.7%) receives their pension regularly and that only 20% have no access to it. It is shocking to observe that only 19.2% of the elderly population believes that government programs for the elderly are always effective, while 29.6% of them believe they are not effective at all.

8.2.2 Gender Specific Dimensions

There is a significant association between gender and active ageing among the elderly population of Kerala. In other words, gender plays a significant role in determining the level of active ageing among the elderly. The chi-square test value of 18.34 with a p-value of 0.000 indicates that there is a significant association

between religion and active ageing among the elderly population of Kerala. The Open Category among the respondents are more likely to engage in active ageing than OBCs and SCs in Kerala. It is also worth noting that none of the respondents from the ST caste reported engaging in active ageing. However, no significant association between the type of family and active ageing among the elderly individuals was seen. But, a significant association between family status and active ageing ($p < 0.001$) was taken note of suggesting that family status may be a factor influencing active ageing behavior. Regarding smoking habit, audibility, alcohol consumption, meditation and yoga it is seen that there is a significant difference among gender. A significant gender wise difference was also found in terms of ADL, feeling of optimism and distribution of vision.

The personal factors of WHO active ageing framework were evaluated in terms of psychological distress, happiness, loneliness, cognitive functions of the elderly, and personality status. The chi-square test result of 3.56 with a p-value of 0.45 suggests that there is no significant gender difference in the psychological distress, happiness, loneliness and cognitive functions of the elderly in Kerala.

It is interesting to examine gender-wise distribution of various social and environmental factors related to active ageing of World Health Organization (WHO) framework. There seemed to be significant association between gender and education, gender and social support and gender and violence. There is gender-wise distribution of various health and social service factors related to active ageing of World Health Organization (WHO) framework also. However, no significant statistical association was found in terms of gender and illness, gender and access to health, gender and mental health. The WHO framework on active ageing includes physical environmental factors also. It is seen that more men (61.1%) than women (45.8%) reported always having a friendly environment and that there is a significant association between gender and the level of a friendly environment. Men and women have different perceptions of the physical environmental factors related to active ageing, particularly in terms of the level of a friendly environment and the absence of pollution in the surrounding. However, it is not backed by statistical support. There are significant gender differences in the economic factors related to

active ageing, including economic status, social security, and access to the labor market. Similarly, significant gender differences in the distribution of various social security factors related to active ageing, such as source of livelihood, types of pensions, awareness of government programs, and effectiveness of government programs was also found.

Religious and Caste Specific Dimensions

The study also found the distribution of active ageing among elderly respondents in Kerala across different religious groups and reveals clear inter-religious variations. A relatively higher proportion of Christians report engaging in active ageing on a regular basis, with the largest share falling under the "Always" category, followed by "Sometimes," indicating a more consistent pattern of active engagement. Hindus also show a substantial level of active ageing, though a comparatively larger proportion report "Never" and "Rarely," suggesting relatively lower regular engagement. Among Muslims, a significant share report "Always" and "Sometimes," reflecting moderate to high participation in active ageing, with fewer respondents in the "Rarely" category.

The statistical test confirms a statistically significant association between religion and active ageing, implying that religious affiliation is an important correlate of active ageing behaviour among the elderly in Kerala. This association may reflect differences in social support systems, community participation, cultural practices, and institutional engagement across religious groups. Overall, the findings suggest that Christians exhibit comparatively higher levels of active ageing, while variations among Hindus and Muslims highlight the need for religion-sensitive and community-based interventions to promote active ageing across all sections of the elderly population.

The also shows a clear caste-based variations in active ageing among the elderly in Kerala. A higher proportion of respondents from the General caste reported engaging in active ageing "always," followed by OBCs and Scheduled Castes, while Scheduled Castes recorded the highest share of respondents who "never" engage in active ageing. OBC respondents were more concentrated in the

"sometimes" category, indicating moderate participation in active ageing activities. Very limited participation was observed among Scheduled Tribes and the "Others" category, reflecting their marginal representation in the sample. The test confirms a statistically significant association between caste and active ageing, suggesting that caste continues to play an important role in shaping active ageing outcomes among the elderly population in Kerala.

Given the observed religious and caste wise variations, the question of whether policies can be tailored to the specific needs of different religious groups becomes highly relevant. While universal ageing policies are essential to ensure equity and basic social protection, the findings suggest that a one-size-fits-all approach may not be fully effective. Faith-sensitive and community-oriented policy frameworks—implemented through local self-government institutions, religious organisations, and civil society groups—can enhance outreach, awareness, and utilisation of welfare programmes. Tailoring interventions to account for religious and cultural contexts, without compromising secular principles, can improve inclusiveness and effectiveness by addressing group-specific vulnerabilities, social norms, and support structures. Such an approach would strengthen active ageing outcomes and promote dignified ageing across diverse religious communities in Kerala.

8.2.3 Determinants of Active Ageing

Apart from the above, the determinants of active ageing were also discussed. Health and social services, social security, and economic conditions were found to be significant determinants of active ageing among both Muslim/Christian and Hindu groups. However, the effects of these determinants differed between the two groups. For instance, the social environment had a negative impact on active ageing for Hindus but not for Muslims/Christians. The study also found significant gender differences in the determinants of active ageing, with women being more vulnerable to the effects of poor health and social services, social environment, and economic conditions.

8.2.4 Policy Prescriptions

The policy alternatives to promote active ageing are divided into specific policy prescriptions and general policy prescriptions. While the specific policy prescriptions are aimed at improving active ageing vis-a-vis findings of the study, the general policy prescriptions are not endemic and hence aimed at assuring overall active ageing among the elderly in Kerala. The specific policy prescriptions include the following.

It is deciphered from the study that family structure is nuclear as much as 89.2% and that majority of the respondents are not working (52%). The problem arising from and associated with nuclear family is that the aged are less cared and attended and most of the primary needs go unmet. This is more severe among the female. May be this is the reason as much as 41 females more loneliness than the counterparts (22). The fact that a greater number of the aged are not working make them economically fragile. So, concrete steps to be taken to enable the aged to find remunerative work amenable to their health. Similarly, pro active steps to be charted out to wipe off the issue of loneliness particularly among the female aged.

The average age is found to be 70 implying higher life expectancy among the respondents. But it should be cautioned that higher life expectancy is to be accompanied by lesser morbidity failing which the status of the aged in the evening of their life becomes more debilitating. It is the responsibility of the State to see that the aged are not living their life in privation.

There seemed to be high economic inequality among the respondents as the minimum income is seen as Rs 500 and maximum Rs 1.2 lakh. Such a reality is always embarrassing as steps to be unleashed to minimize the economic chasm among the aged.

It is noteworthy that 17% of the aged are happy ‘always’ as well as ‘rarely.’ Such a contrast has to be addressed systematically as to identifying the causes of ‘rare’ happiness and bringing them to the bracket of being ‘always happy.’

The fact that no scheduled tribe is seen engaged in active ageing has to be viewed seriously. It is to be explored as to the causative factors why the tribe are left out of the bracket of active ageing. A comprehensive research is also the need of the hour in this regard. It is because the tribal community have almost everything free at their finger tip. Still, what prevents the aged among the tribes to have access to active ageing is to be researched seriously.

The smoking and alcohol consumption of the elderly male are 24% and 15% respectively whereas it is 0.6% and 1.3% among the elderly female. May be the elderly male, most often, step out and interact with the peers outside the family which may prompt to fall as easy victims to such unhealthy habits whereas lesser sociability among the elderly female compared to their counterparts make them less vulnerable to smoking and alcohol use. However, psychological distress and loneliness is seen more among female than male which have to be looked into with caution. Now that male have more smoking and liquor use, as much as 85 numbers of male (85) have 4 or more illness than female (65). Similarly, more female (21.3%) are seen less socially secure than male (15%). Why is it that compared to male elderly, female elderly is having lesser social security has to be investigated meticulously. It may also be noted that governmental programmes have more accessibility among the male (98 persons) than the female (40 only). A recast of the existing governmental programmes tailored to the aged has to be thought of seriously. With regard to the attainment of education, it is ascertained that as much as 65 female aged have no education whereas it is 48 among aged male. The fact that more female aged have no education should be viewed seriously. Lack of education of an aged female have repercussions upon the posterity and whether the female aged are more cloistered to care economy than the aged male which prevents from having access to education should be analysed separately. Apart from this, whether gender discrimination is prevalent so far as education is concerned has also to be contemplated in a serious way.

Apart from the aforesaid specific policy prescriptions, the general policy prescriptions include the following.

Fuller enjoyment of socio-economic, cultural, political and civil rights for older persons should be ensured aside from eliminating discrimination against them. The major three factors responsible for addressing issues among the aged are gender equality, human rights and dignity. The policies of the government should consider a life cycle approach so that elderly community are free from all kinds of prejudices and dislikes.

Age related abuse and discrimination especially at workplace is one of the vexatious issues confronted by the elderly. Stringent steps to be initiated to stem the tide of such an unhealthy practice among them.

It is high time to permanently generate, and store necessary data systems disaggregated by socio-economic characteristics in terms of sex, age, education, economic and health status. An accessible and reliable data bank must be generated to track the overall wellbeing of the geriatric community. Data on population ageing are strategic in having evidence-based policies and shoring up the monitoring and evaluation of programme delivery to guarantee their effectiveness.

Considering the age and sex in the labour market, laws must be enacted, fine-tuned and executed. This is imperatively important in view of the re-entry of older women workers into the labour market, equitable access to social security and availability of employment benefits. So far as aged women are concerned, it is high time to ascertain flexible and adjustable work arrangement opportunities for them, guarantee financial inclusion and identify income generating schemes to shoot up savings for them. Social security systems are stimulating ingredients to avert social risk of frailty. There is significant gender differences in the economic factors related to active ageing, including economic status, social security, and access to the labour market.

One of the most effective and salutary recommendations is accessibility and expansion of social pension for all older persons in view of their increased cost of living so as to assure income security among them. Compared to men, older women have lesser experience and opportunities to participate in labour market taking into account increased cost of living to improve old age income security. There is no

qualm that social pension has been widely recognized as one of the most effective tools in reducing poverty among older people as it worked to be a shock absorber in flushing out familial poverty. Combating poverty will minimize the chasm of health inequality and prompt and promote the aged to register their active participation in society.

It is equally noteworthy that no older persons are left behind especially older women in having equitable access to social wages. This is applicable to all irrespective of the locality as rural and urban, indigenous or older migrants, female head of the household, women with physical impairments and those with other vulnerabilities.

Urgent steps have to be taken for improving affordable access to quality health services for older communities so that they get out of the morass of financial hardships to meet out of pocket expenditure. Universal health coverage should also be guaranteed among the aged so that they are spared from physical vulnerabilities and mental estrangements.

A long-term care system tailored to and targeted at physical and mental health and social inclusion inclusive of palliative care and community workers should meticulously be developed so that the aged are not thrown out of the social security net at any cost. Comprehensive mental health services may be assured for both men and women who are ageing. Quality care should be discharged for those who suffer from dementia and other psychological and neurological problems.

There is no dispute over the fact that integration, health and participation are highly correlated. While social integration and participation in the labour market have positive spillover effects each other, health is an inevitable prerequisite for vibrant entry into labour market and continuous sustenance. Hence early and late investments in health have to be assiduously ensured for maintaining active ageing.

While health promotion policies are being promulgated for promoting active ageing, government should be aware of the fact that such steps help improve the living conditions of the aged even though they may not entirely prevent frailty. So,

active ageing does not imply disease free body condition with athletic body, instead it promotes multiple opportunities to sustain quality of life of the older cohorts.

Government should be aware of the fact that active ageing can't be fulfilled all on a sudden; instead, it is a long-term process with multidimensional aspects especially education. Children must have guaranteed access to primary, secondary and tertiary education while at the same time minimizing the menace of dropouts from educational institutions. Education can therefore bring about successful development in early phases of life which is a bedrock for promoting active ageing in later period of life.

It is deemed desirable to realise opportunities to maintain intergenerational contact intact. The diversities during the interaction each other will promote social cohesion and solidarity. Both younger and older generations, afar from generational gap, should be able to benefit from exchanges both inside and outside the family. The latter is possible through community participation and multi generation meetings. Let the aged involve in the planning and implementation of local based health and recreational programmes.

Volunteering is a gateway to active ageing. Elderly should be given multiple opportunities to steer themselves to volunteering activities beneficial to the society in terms of, say, for instance, skill development, neighbourhood plays and the like. These manifold activities enable the aged to invest their leisure time more profitably by being an integral part of their society and that it helps to fight against loneliness and social isolation.

It may be borne in mind that older people and their caregivers should vigorously participate in the planning, execution and evaluation of programmes and policies in relation to active ageing. The programmes have to be addressed to averting disabilities of later life especially of marginalised groups.

Age-friendly health care centres may be made to prevent worsening of disabilities among the aged. Occupational safety standards should compulsorily be enforced to salvage aged workers from injury. For those who have seeing

impairments, appropriate eye care services may be implemented. Those who have hearing impairments may be encouraged to use hearing aids. In public places, barrier-free and aged- friendly amenities may be ensured. Such policies may be enacted which provide rehabilitation services, affordable access to services and community support.

A healthy discussion on the institutionalization of care for the aged should be done rather than enforcing stringent rules to keep them at old age homes. The need and demand of the aged should be prioritized on their living arrangement. Wherever they stay should be clean and green with little exposure to pollution.

Healthy eating and adequate nutrition are a prerequisite to active ageing. The older cohorts must be stakeholders to National nutrition policies of the government. Food security and safety must be assured for the people who are ageing.

8.3 Further scope of the study

The study has left some areas on the ageing literature untouched. Although much was discussed as to active ageing, its dimensions with respect to WHO framework and major determinants of active ageing in the thesis, neither inter-district comparison nor inter-state comparison has been made on the above discussed issues. In addition, the UN through its specialized agency WHO has made a paradigm shift in its old age policy from active ageing to healthy ageing (2021-2030). In this backdrop, whether all the dimensions of active ageing in the context of WHO framework materialized particularly in a state like Kerala which made rapid strides in health sector must be analysed. For a comprehensive policy perspective, the trade-off between active ageing and healthy ageing should be wiped off as far as possible.

8.4 Contributions of the researcher

While bulk of the research has so far structured around ageing, its implications, socio-economic issues of the elderly, especially left behind elderly, living arrangements of the aged at the old age home as well as in families,

demographic transition and its pattern, little systematic research has been done in Kerala in the context of active ageing. In other words, literature on the transition from ageing to active ageing is sparse. While the State can boast of an old age policy, how far the proportion of grey population, the highest in India, cope with and react to the concept of active ageing in the WHO framework has seldom been researched so far which is an indispensable addition to the lacuna of existing literature on ageing.

8.5 Conclusion

From the above discussion, it drives home that active ageing approach provides a comprehensive framework for the overall development of global, national and local strategies on population ageing. Unlike other states, the state of Kerala has to tread cautiously particularly on two grounds. One, the State is on the verge of a zero-population growth as increasingly larger number of couples prefer to remain childless. Secondly, there is a predominant increase in the proportion of the aged community due to enviable progress in life expectancy especially among the aged women accentuating the disturbing tendency of more aged widows compared to widowers. By synchronising the three pillars for action of health, participation and security and seven composite indexes, active ageing offers a platform that voices the pressing concerns of the older community seriously. Until and unless follow – up actions are initiated in time, the recommendations remain writing on the wall. The State must play a vibrant role keeping in mind timely execution of United Nations Principles for Older Persons 1991 and State old age policy promulgated in the year 2013. Laudably, in the State Budget 2025, a comprehensive scheme was launched by the Govt which include strengthening palliative care, health care benefits to such patients are bedridden, installation of exercise equipment's in the parks which are tailored for seniors. Apart from this, an allocation of Rs 5 crore was set apart for the promulgation of 'New Innings Project' which incentivise the elderly to have new projects or industries set up by leveraging their experience. Additionally, the Kerala assembly passed the Kerala Elderly Commission Bill 2025, the first of this kind in India, exclusively for the well-being, rehabilitation and protection of elderly

community in the State. It is mandated with the task of making use of the inestimable services of the aged so as to encourage their active participation in the society while addressing the issues of social isolation.

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APPENDICES

INTERVIEW SCHEDULE

ACTIVE AGEING IN KERALA: DIMENSIONS AND DETERMINANTS

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1. **Name** :
2. **District** :
3. **Taluk** :
4. **Panchayt** :
5. **Location** :
6. **Gender** :

   (1) Male
   (2) Female
   (3) Other

7. **Age** :
8. **Religion** :

   (1) Hindu
   (2) Muslim
   (3) Christian
   (4) Other

9. **Caste** :

   (1) General
   (2) OBC
   (3) SC
   (4) ST
   (5) Others

10. **Family Size :**

11. **Type of Family:**

(1) Nuclear
(2) Joint

12. **Marital Status :**

(1) Married
(2) Unmarried
(3) Widowed
(4) Others

13. **Do you belong to :**

(1) APL (Above Poverty Line)
(2) BPL (Below Poverty Line)

14. **Employment Status :**

(1) Working
(2) Not working
(3) Others

15. **Average Monthly Household Income :**

16. Putting everything together, if active ageing is defined as a" process through which an individual tries to maintain the components of health by participating in activities consistent with their objectives, abilities, and opportunities in the community, which can be described as what they want to do and can do, and opportunities to do the activities they enjoy.? Do you agree?

(1) (Never

(2) Sometimes

(3) Rarely

(4) Always

BEHAVIOURAL FACTORS

17 Please rate your health status:

(1) Very poor

(2) Poor

(3) Reasonable

(4) Good

(5) Very good

18 If you have sleep deprivation, how will you react to it?

(1) Very serious

(2) Serious

(3) Moderately serious

(4) Less serious

(5) Not at all serious

19. How do you rate your ADL (Activities of Daily Life)?

(1) Very poor

(2) Poor

(3) Reasonable

(4) Good

(5) Very good

20. How do you view the feeling of optimism in your life?

(1) Very poor

(2) Poor

(3) Reasonable

(4) Good

(5) Very good

21. How do you rate your pulmonary functions?

(1) Very serious

(2) Serious

(3) Moderately serious

(4) Less serious

(5) Not at all serious

22. Please rate your vision:

(1) Very poor

(2) Poor

(3) Reasonable

(4) Good

(5) Very good

23. Please rate your audibility:

(1) Very poor

(2) Poor

(3) Reasonable

(4) Strong

(5) Very strong

24. What is the pattern of your alcohol consumption?

(1) Always

(2) Occasionally

(3) Rare

(4) Sometimes

(5) Never

25. What is the pattern of your smoking?

(1) Always

(2) Occasionally

(3) Rare

(4) Sometimes

(5) Never

26. What is the pattern of meditation and yoga you are engaged in?

(1) Never

(2) Rare

(3) Occasionally

(4) Sometimes

(5) Always

PERSONAL FACTORS

27. What is the extent of your psychological distress? How do you respond to it?

(1) Very severe

(2) Severe

(3) Moderately severe

(4) Less severe

(5) Not at all severe

28. How do you experience happiness in your life?

(1) Not at all

(2) Rarely

(3) Sometimes

(4) Most often

(5) Always

29. What is the level of loneliness you are experiencing?

(1) Always

(2) Most Often

(3) Sometimes

(4) Rarely

(5) Not at all

30. How do you evaluate your cognitive functions?

(1) Very poor

(2) Poor

(3) Moderate

(4) Above moderate

(5) Excellent

31. How do you rate your personality?

(1) Very poor

(2) Poor

(3) Moderate

(4) Above moderate

(5) Excellent

SOCIAL ENVIRONMENT FACTORS

32. What is the level of your education?

(1) No education

(2) Primary

(3) Secondary

(4) Higher Secondary

(5) Degree and above

33. The level of social support and network you have:

(1) Never

(2) Rare

(3) Occasionally

(4) Sometimes

(5) Always

34. What is the level of violence and abuse you experience?

(1) Always

(2) Rarely

(3) Occasionally

(4) Sometimes

(5) Poor

HEALTH AND SOCIAL SERVICES

35. **If you have an illness, how do you react to it?**

(1) 4 or more illnesses

(2) 3 illnesses

(3) 2 illnesses

(4) One illness

(5) None

36. **What is your access to health services?**

(1) Poor

(2) Rare

(3) Occasionally

(4) Sometimes

(5) Always

37. **What is the level of physical and mental health care you receive?**

(1) Very bad

(2) Bad

(3) Reasonable

(4) Good

(5) Very good

PHYSICAL ENVIRONMENT FACTORS

38. What is the level of your friendly environment?

(1) Poor

(2) Rare

(3) Occasionally

(4) Sometimes

(5) Always

39. How do you rate the safety of the house you are in?

(1) Very poor

(2) Poor

(3) Moderate

(4) Above moderate

(5) Excellent

40. How do you rate the absence of pollution in your surroundings?

(1) Very poor

(2) Poor

(3) Moderate

(4) Low Pollution

(5) No Pollution

ECONOMIC FACTORS

41. Please rate your level of economic status:

(1) Very poor

(2) Poor

(3) Middle

(4) Upper middle

(5) High

42. What is the level of your social security?

(1) Least secured

(2) Secured

(3) Reasonably secured

(4) Somewhat secured

(5) Always secured

43. How do you rate your access to the labor market?

(1) Not at all

(2) Rarely

(3) Sometimes

(4) Most often

(5) Always

SOCIAL SECURITY

44. Sources of Livelihood:

(1) Pension

(2) Depended on family income

(3) Daily labour

(4) No source

45. Type of Pension:

(1) Disability Pension

(2) Old age Pension

(3) Retired Govt Employee Pension

(4) Widow Pension

(5) Other

46. Are you regularly receiving a pension?

(1) No

(2) Yes

47. Are you aware of the governmental programs for promoting active ageing among you?

(1) No

(2) Yes

48. How do you rate the policy interventions of the government to make ageing active?

(1) Not at all effective

(2) Moderately effective

(3) Somewhat effective

(4) Always effective